e Iron A

A Review of the Hardware, Iron and Metal Trades.

Published every Thursday Morning by David Williams, No. 83 Reade Street, New York. Entered at the Post Office, New York, as Second-Class Matter.

Vol. XXIX: No. 1.

New York, Thursday, January 5, 1882.

\$4.50 a Year, Including Postage. Single Copies, Ten Cents.

The Cowper Hot Blast Stove. We show in the accompanying illustration a sectional elevation of a "Cowper" stove with downcomer, and a short description of the same. The stoves are fire-brick stoves, with regenerators very like those used in the Siemens furnaces, but are made of such large capacity that they will work well at four-hour shifts and give a very uniform temperature of blast—in fact, more uniform than is commonly obtained from cast-iron pipe stoves. Each stove is alternately heated by the combustion of the waste gas from the top of the blast furnace, and then is made to heat the blast as it enters at the bottom and ascends through the stove. The air-tight casings of the stove are of wrought iron to retain the blast, and are lined with brick to retain the heat. While heating up the stove the flame blast, and are lined with brick to retain the heat. While heating up the stove the flame passes up the cylindrical flame flue on a compact mass of high temperature, and turns over under the single fire-brick covering dome and passes down through the numerous passages of the regenerator fire-brick P, and thus heats it up to a high temperature, the heat gradually penetrating downwards as each layer of brick work becomes fully heated, the heat being stratified, so to speak, from the lower always being the cooler part, so that there is no tendency for the hot and cold air to mix. When the blast is being heated it is brought in at the bottom, and gradually air to mix. When the blast is being heated it is brought in at the bottom, and gradually ascends as it becomes heated, so that the very tendency of the apparatus itself is to prevent any cooler air becoming mixed with hotter air, and thus lower the temperature of the air, and thus lower the temperature of the issuing hot blast. The waste gas from the top of the blast furnace is brought down by a peculiar "down-comer," X, which catches a a large proportion of the dust that comes over with the gas, the gas passing down a central tube, and then issuing through holes in that tube into an outside tube, while much of the dust goes straight down into a pocket, in which it is caught; the gas descending still lower, again enters the central tube through other holes, while a further portion of fine dust is deposited in a pocket formed by the outside tube; the gas then passes down through an underground flue to the underby the outside tube; the gas then passes down through an underground flue to the underside of the gas valve, where it enters the stove through a peculiar burner, which allows of three flat sheets of gas passing upward, where almospheric air is permitted to pass in horizontally between and around these sheets of gas, so that a most intimate mixture rapidly takes place, and thus insures a good full, round flame of high temperature being produced in the flame flue, with which to heat the stove. One result of the products of combustion, or rather flame, being at a very high temperature on ascending, and being cold on descending, is that the stove makes its own natural draft, acting exactly like a syphon, and thus drawing in air and gas and expelling the thoroughly cooled products of combustion at the chimney valve; the friction through the stove is very little indeed—in fact, far less than through any other stove.

The explindrical flame flue is on one side of

The cylindrical flame flue is on one side of The cylindrical flame flue is on one side of the stove, and the chimney valve D on the other side, so that the distance traveled by the air is nearly the same through any pas-sage, and tiles with definite sized openings in sage, and tiles with definite sized openings in them are placed over every passage to cause perfect distribution. Any light or very fine dust that may settle in the stove is easily blown out at tapping time by arranging a door on the gas valve or manhole, to be opened quickly by two men at a long lever when the stove is full of blast at full pressure—all valves but the cold blast being shut—as then a sudden outburst of compressed air. —all valves but the cold biast being shut—as then a sudden outburst of compressed air comes out, bringing with it the dust. This is a most efficient plan, and if any dust should hang at all in the stove, it is easily removed by a few slight puffs of gunpowder from a gan once a month; there is no stoppage whatever of the stoves for cleaning and whatever of the stoves for cleaning stoves have run for two years perfectly without being opened, and when opened have been found to be in perfect condition. There is, it would seem, little or no wear and tear in the stoves, as the bricks are unaffected in the stoves, as the bricks are unaffected after being used for many years, and wrought-iron casings never want a rivet touching, as they are not subjected to any great heat, being protected by the lining of the brickwork. A large number of these stoves have been in operation for some years in England, Wales, France, Germany, Switzerland and America, and, no doubt, will be in blast even in China at no very diswill be in blast even in China at no very distant date. The stoves heat the blast to 1500° F. The stoves can be made of any reasonable size, as the bricks stand fairly or upon another. One advantage resulting from the regularity of temperature of the blast during the time of heating is that but one stove need be in use at a time, and therefore one pair of stoves is enough for two furnaces. In our illustration A is the gas flue from the furnace : B, the manhole for cleaning out dust : gas flue; E, hot-blast valve; G, air valve; gas valve; S, sight hole; D, chimney valve; U, chimney flue; T, gallery. In our next issue we shall give a plan for the arrangement of a pair of these stoyes.

other stove.

V. Henry Rothschild, a merchant in Leonard street, for whom an immense iron building on the corner of that street and West

Magazines for Explosives.

Capt. Philip Hess, of the Austrian Imperial Engineers, has been for some time experimenting on the best materials for constructed magazines and factories of explosive material, and for protecting them from fire. The generally provailing idea that such building should be made very strong, with thick walls, is entirely dismissed. No walls will resist the force of the explosives; an explosion must be made that it shall do as little mischief as possible. Falling fragments are the great source of danger; and the made very strong will be made that it shall do as little mischief as possible. Falling fragments are the great source of danger; and the provision must be made that it shall do as little mischief as possible. Falling fragments are the great source of danger; and the provision must be made that it shall do as little mischief as possible. Falling fragments are the great source of danger; and the provision must be made that it shall do as little mischief as possible. Falling fragments are the great source of danger; and the provision must be made that it shall do as little mischief as possible. Falling fragments are the great source of danger; and the provision must be made that it shall do as little mischief as possible. Falling fragments are the great source of danger; and the provision must be made that it shall do as little mischief as possible. Falling fragments are the great source of danger; and the provision of the surface of the heavier these are, the more harm will be likely and the surfaces, the basis of all that were satisfactory, combined with such substances as would form indissoluble silicates on the surface of the wood. Such are powdered slate, brick-dust, bright and each to recipilate was heated to a clear red glow, laid on the preparations of and left there until cool; and lastly, a jet of the subject of the subject of various preparations, and the general result was that water-glass formed the basis of all that were satisfactory, combined with such substances as wou fairly corresponds to frost; but the Portland cement preparation appears to be the only one which he has submitted to this test. It withstood it satisfactorily, as well as that of the actual frost itself. None of these com-positions should be used in the interior of the magazine itself, or in the work rooms of the factories, on account of the danger of friction from crumbling morsels.

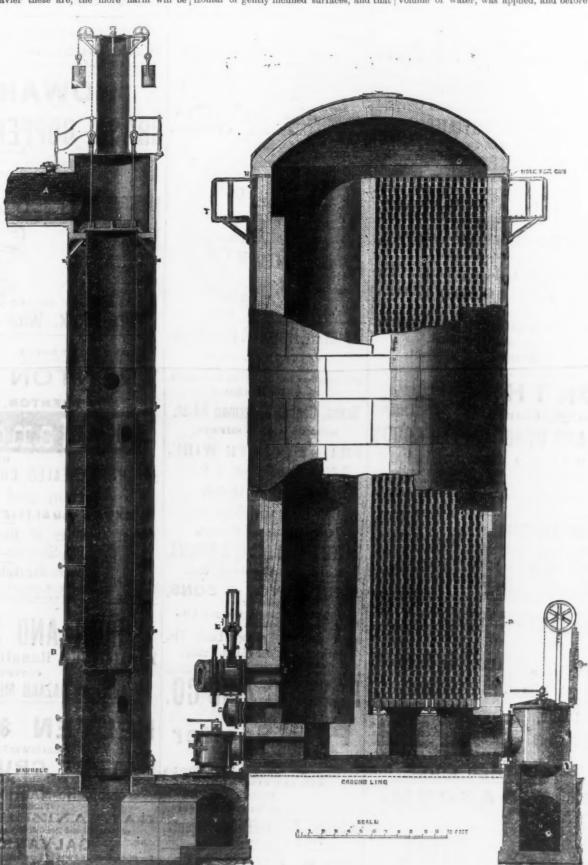


The official programme of the recommendations and resolutions to be considered at the coming annual meeting of the National Board of Trade, has just been prepared and issued. The convention is to be held in Washington, beginning on the 18th inst. Reports will first be received from special committees appointed at the last convention to consider the adulteration of food and drugs, trade relations with Canada and the pilotage service. Resolutions submitted by boards of trade and chambers of commerce in various cities in the country will be taken up in the dations and resolutions to be considered at the cities in the country will be taken up in the following order and on the following sub-

Security for advances on goods in transit; a national bankrupt law, on which three different recommendations have been made by the New York Board of Trade, the Balti-Board of Trade and the Philadelphia Board of Trade; a department of commerce as a branch of the general government; a definite constitutional method for settling definite constitutions of the business of the country, measures to secure a modificable. country; measures to secure a speedier hear-ing of causes in the United States Supreme Court; increased diplomatic and consular service to meet the needs of our growing export interests; the requirements of a postal telegraph system as successfully used in Great Britain; a permanent national railroad commission established by the general government, to supervise common carriers in the interest of the public, to act in harmony with and applied to the results of the public, and the supervise common carriers in the interest of the public, to act in harmony with and applied to the supervision of the with and auxiliary to the various State commissions; a United States Navy adequate for the protection of our sea coasts, the interests of American shipping requiring the removal of local taxation, reciprocity in the matter of of local taxation, reciprocity in the matter of light dues in foreign ports and the reasonable subsidizing of mail lines to promote commercial intercourse with all important regions of the globe; revision of the revenue and tariff laws by a repeal of all internal taxes, except on whiskey and tobacco, and the appointment of a commission of experts to prepare a tariff more accurate, effective and suitable to the present conditions. and suitable to the present conditions of American industries, and return of the balance of the Japanese indemnity fund after the actual damages sustained by citizens of the United States have been paid.

The United States Torpedo Service. -The reports recently published from the departments at Washington state that very useful work has been done at the Torpedo which has turned out a class of well instructed in the elements of officers wen instructed in the elements of torpedo attack and defense. A new torpedo, lately purchased by the department, shows a very considerable excess of speed above those previously furnished, and another movable orpedo has been experimented with. Extenresearches have been made into syste of defense of vessels against torpedoes, both by means of obstructions and by the electric ight. Experiments are also being made with a view to the introduction of a higher explosive than gunpowder into the torpedo vice. The impression prevails in some quarters that torpedoes alone would suffice for the defense of our coast against a hostile fleet. This view is not sustained. Torpedoes, either for defense or attack, must be covered and defended by the fire of powerful rifled guns, both afloat and ashore. There are various methods in vogue for the destruction and removal of hostile torpedoes, and these appliances are being constantly perfected. In view of this state of affairs it would be rash, indeed, to place our reliance upon torpedoes alone. The two destructive agents (artillery and torpedoes) supplement each other, and, as a rule, must be employed together.

Although New York has a number of illumhe inated clocks, scarcely any of them have dial plates easily read at night, except by he persons of decidedly strong sight. One of the best night clocks in existence is that at the



THE COWPER HOT BLAST STOVE

done. Such buildings ought, therefore, to be made of the lightest possible material, and where they can be situated in the midst of, high and thick trees a valuable protection of the Roman Asbestos Company is an excellent material, being uninflammable, weatherard street, for whom an immense from building on the corner of that street and West Broadway has just been completed, has had a bridge 45 feet long constructed from an upper story of the new building across Leonard street to the old quarters of the firm, and over this, which has covered sides and is held up by iron trusses, the removal of the stock and other property is being made,

and where they can be situated in the midst of the Roman Asbestos Company is an excellent material, being uninflammable, weather is obtained. Wood has, however, the drawback of being easily inflammable, and as explosives are frequently stored for convenience of use near the works where they are employed, which nearly always implies the neighborhood of fires of some sort, it is necessary to protect it against flying snarks. ater and hot metal, but scaled off under the similar composition made with lime, on the contrary, proved excellent, withstanding all the tests after three days' hardening. The Metals.

ANSONIA BRASS & COPPER CO..

No. 19 Cliff Street, Phelps Building, NEW YORK. MANUFACTURERS OF

BRASS AND COPPER

Sheets, Bolts, Rods, Wire, &c. Seamless Brass & Copper Tubing.

Ansonia Corrugated Stove Platforms. PURE COPPER WIRE

For Electrical Purposes, Bare and Covered Phosphor Bronze Rods for Pumps, &c.

ANSONIA REFINED INCOT COPPER.

PHELPS, DODGE & CO

TIN PLATE. ROOFING PLATE,

Sheet Iron, Copper, Pig Tin Wire, Zinc, &c.

MANUFACTURERS OF

COPPER AND BRASS.

CLIFF STREET. NEW YORK. SCOVILL MFG CO

BRASS. HINGES, WIRE, GERMAN SILVER

PHOTOGRAPHIC GOODS.

BUTTONS, CLOTH AND METAL.

DEPOTS, 419 & 421 Broome St., N. Y. 177 Devonshire St., Boston. 177 Devonshire St., Bo 183 Lake St., Chicago.

FACTORIES, Waterbury, Conn. New Haven, Conn New York City.

DICKERSON, VAN DUSEN & CO.,

Tin Plate, Pig Tin, Sheet Iron, Cooper, Wire, Zinc, Etc.

20 & 21 Cuff St., cor. Fulton, DICKERSON & CO., Liverpool.

Metals.



Waterbury Brass Co.

CAPITAL, - . \$400,000. Sheet, Roll and Platers' Brass, GERMAN SILVER,

Copper, Brass and German Silver Wire BRASS AND COPPER TUBING, COPPER RIVETS & BURS, BRASS KETTLES,

Door Rail, Brass Tags, PERCUSSION CAPS,

POWDER FLASHS.

Metallic Eyelets, Shot Pouches, Tape Measures, &c. And small Brass Wares of every Description, Cartridge Metal in Sheets or Shells a Specialty. Sole Agents for the

Capewell Mfg. Co.'s Line of Sporting Goods. DEPOTS: Mills At WATERBURY.

296 Broadway, New York, 125 Eddy St., Providence, R. I. Conn

Detroit Copper & Brass Rolling Mills.

BRAZIERS' AND SHEATHING COPPER, ROLLED, SHEET & PLATERS' BRASS

GERMAN OR NICKEL SINVER Wire for Electrical and other purp Brass and German Silver Wire.

Copper Rivets and Burrs, COPPER BOTTOMS FOR TEA KETTLES AND BOILERS, Cor. Larned & Fourth Sts., Detroit, Mich.

ROME IRON WORKS, Manufacturers of

Brass, Gilding Metal, Copper and German Silver (In Sheets, Rods, Tubing or Wire),

COPPER & BRASS RIVETS AND BURS.

Rome, New York.

C. NORTHROP,

Waterbury, Conn.,

NOVELTIES IN BRASS AND OTHER METAL GOODS

FOR HARDWARE TRADE.

Wrought Iron and Brass Machine Screws; Turned, Hexagon, Round and Square Head Cap and Set Screws; Brass and Iron Safety and Jack Chain; Gilt, Nickel Plated and Bronze Trimmings of all kinds, from Sheet Iron, Steel or Brass.

Estimates on patented articles, or any description of Sheet Metal work, respectfully solicited and promptly given.

WORKS

TRENTON,

ROEBLING'S

117 Liberty Street. N. J.

JOHN A. ROEBLING'S SONS CO.,

WIRE ROPE

Iron, Steel and Copper,

Hoisting Purposes of all kinds, for Ferries, Stays, Ship Rigging, Sash Cords, Vineyard Wire. Lightning Rods, &c., &c. Suspension Bridge Cables.

GALVANIZED Telegraph Wire, Market Wire.

Iron and Steel WIRE

New York Office

Warehouse,

Market Wire, Fence Wire, Bridge Wire, Chain Wire, Buckle Wire, Spring Wire, Bivet Wire, &c., &c.

CALVANIZED WIRE CLOTHES LINES.

BRODERICK & BASCOM,

IRON



STEEL

St. Louis, Mo.

WORCESTER CO.,

IRON AND STEEL

For all Purposes. WORCESTER MASS.



Metalo.

The Plume & Atwood Mfg. Company,

MANUFACTURERS OF

SHEET and ROLL BRASS and WIRE

German Silver and Gilding Metal,

Copper Rivets and Burs, Kerosene Burners,

Lamp Trimmings, &c. 18 Murray Street, New York.

13 Federal Street, Boston. 109 Lake Street, Chicago. Rolling Mill. Factories, THOMASTON, Ct. WATERBURY, Ct.

Bridgeport Brass

Sheet and Roll Brass, Brass & Copper Wire & Tubing, German Silver Metal and Wire, Copper and Iron Rivets.

OILERS and CUSPADORES, | LAMPS and TRIMMINGS, LANTERNS and TRIMMINGS, KEROSENE BURNERS, Clocks & Fly Fan Movements PLUMBERS' MATERIALS. Particular attention paid to cutting out Blanks and manufacturing Metal Goods.

MANUFACTORY, WARRINGTON, Bridgeport, Conn. 19 Murray St., N. Y THOS. W. FITCH, Prest. and Treas. A. A. LASAR, Secy.



ST. LOUIS, MO.

Holmes, Booth & Haydens, WATERBURY, CONN.

18 Federal St. Manufacturers of all kinds of

Brass, Copper & German Silver, ROLLED AND IN SHEETS.

BRASS & COPPER WIRE, Tubing, Copper Rivets & Burs.

BRASS & IRON JACK CHAIN, DOOR RAIL. German Silver Spoons,

SILVER PLATED FORKS & SPOONS Kerosene Burners, &c.

JOHN DAVOL & SONS,

Brooklyn Brass & Copper Co., Ingot Copper, Spelter, Lead, Tin, Antimony, Solder & Old Metals.

Pure Spelter

AND ALL FINE WORK. Also for

Galvanizers & Brass Founders. MANNING & SQUIER, Gen'l Agents, 113 Liberty Street, N. Y.

Geo. W. Prentiss & Co., HOLYOKE, MASS., MANUFACTURERS OF



The Schoenberg Metal Mfg. Co., SOLDER,

Stereotype, Electrotype and Babbitt Metals, mporters of Block Tin, Antimony &c. Refiners of &dd. Spelter, &c. Righest price paid for Old Metal d. Spelter, &c. Highest price paid for Did Metals | 919 to 923 N. Main St., ST. LOUIS, MO. all kinds of Dross. 528 and 539 East 29th 919 to 923 N. Main St., ST. LOUIS, MO. set. between Avenues A & B. New York.

Belire, ett.

CHAS. F. WASHBURN, Vice Pr WASHBURN & MOEN MANUFACTURING CO.



IRON and STEEL WIRE,
Patent Steel Barb Fencing, Patent Steel Wire Bale Ties.

TRE RODS of all Grades: Round from Elvet quality, 5.15 in. to Kin., cut to any length operators of the PATENT CONTINUOUS ROLLING MILL, producing from 5 100 pounds, without a EAM or WILL. Producing House, Man 100 per the Section of the Patent Calvanging of Telegraph Wire, Mar iors or the FATANY ON THE PARENT GAVENING Telegraph Wire, he fence and drape Wire in long length; Coppered Fall-Ball Wire, Rope, Bridge, Bol Wire, Wire Wire Wire for the manufacture of Card Clothing, Heddles, Reeds, &c. Plano com Wire and Thaned-plated Wire of all sizes. A specialty is made of Clock, Maxing Wire, and Refined Wire to Fatters for particular purposes, from selected street of Wire furnished, Annealed, Brignt, Folished, Coppered, Calvaniced or Tin F WAREHOUSE, 21 Cliff Street, New York.

" NATIONAL WIRE AND LANTERN WORKS,"

Warehouse, 45 Fulton Street, New York. And California Wire Works Co., San Francisco, Cal.

HOWARD & MORSE,

BRASS, COPPER & IRON WIRE CLOTH,







Way Gates.

HEAVY ROLLED CLOTH FOR MALT KILN FLOORS. Wire Work, Wire Fence, Railing and Guards.

ABRAM S. HEWITT, President WM. HEWITT, Vice President.

JAMES HALL, Treasurer E. HANSON, Secretar,

TRENTON IRON COMPANY,

TRENTON, N. J., Manufacturers of

OF ALL GRADES BRIGHT, ANNEALED, COPPERED, TINNED AND GALVANIZED; Iron and Steel Wire Rods; EXTRA QUALITIES OF BAR IRON AND RODS.

Best Qualities of Gun-Screw and Charcoal Iron Wire; Crucible, Siemens-Martin and Bessemer Steel Wire.

> Wire Straightened and Cut to Lengths. New York Office, COOPER, HEWITT & CO., 17 Burling Slip. Philadelphia Office. JOHN HEWITT. Agent, 21 North Fourth St.

For Hoisting, Running & Standing Ropes, Ferries, &c CONSTANTLY KEPT ON HAND. Address: HAZARD MFG. CO., Wilkesbarre, Luzerne Co., Pa.

FELTEN & GUILLEAUME,

Carlswerk, near Cologne, Germany. Cartridge Brass, Gas Fixtures, Bronzes PATENT CRUCIBLE STEEL WIRE.

SIEMENS-MARTIN AND BESSEMER STEEL WIRE,

GALVANIZED TELEGRAPH WIRE

GALVANIZED STEEL WIRE,
For Plain, Barb and Strand Fencing, 3, 4 and 7-ply Strand, Staples, &c. Annealed and Oiled Fencing
Wire, round and oval.

WIRE ROPE OF EVERY DESCRIPTION.

TELEGRAPH CABLES. Contractors to the German and Foreign governments. The oldest house in the branch on the Coninent. Telegraph Address, CAHLSWERK, COLOGNE.

PERKINS & CHOATE, 23 Nassau St., N. Y.

A. LESCHEN & SON,

OF EVERY DESCRIPTION. Correspondence invited,

And s

Lar low pr

Sch

M

G. S. V

The

twelve months ended June 30 had been only



O. LINDEMANN & CO.,

> Manufacturers of all kinds of Japanned, Brass & Tin Plated

BIRD CAGES

254 Pearl St.

NEW YORK.

CARY & MOEN, Manufacturers of
STEEL WIRE for all purposes and STEEL SPRINGS of every description.



Market Steel Wire, Crinoline Wire, tempered and covered.

Patent Tempered Steel Furniture Springs, constantly on hand.

LIGHT HOISTING

YALE LOCK MFG.CO.

STAMFORD, CONN.

New York, 53 Chambers Street, 36 Pearl Street, Philadelphia, 507 Market Street, Chicago, 64 Lake Street.

BROWN & BROTHERS.

81 Chambers St., N. Y. Waterbury, Conn.

BRASS, COPPER AND GERMAN SILVER,

In Sheets, Rolls, Rods, Wire, Tubing. Rivets and Burs, Etc. ALSO,

Seamless Brass & Copper Tubing.

PATENTED SEAMLESS BRASS AND COPPER HOUSE BOILERS, warranted to stand soo lbs. pressure and guaranteed against vacuum.

PATENTED SPRING TEMPERED SHANK, SILVER-PLATED, FLAT TABLE WARE, in rich

GERMAN SILVER SPOONS AND FORKS.

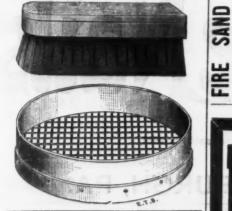
POPE, COLE & Co. BALTIMORE

No. 57 South Gay St., BALTIMORE, MD., Have always on hand and for sale

INGOT COPPER,

Also Cakes, of unequaled purity and toughness

RIDDLES AND CASTING BRUSHES E. T. BARNUM, Detroit, Mich.





Can be nested for ex 46 Park Place,

NEW YORK. patterns and unsurpassed in istrated Catalogues and Price

Schenectady Molding Sand Co. ALBANY AND SCHENECTADY MOLDING SAND
delivered on cars or boats at low rates. All grades
guaranteed. All orders will receive prompt attention. Address, J. G. GHEENE, Sec.,
22 Wall St., SCHENECTADY, N. Y.
G. S. VEEDER, Pres; J. G. GREENE, Sec. and Treas.

The Morris Sash Lock Mfg. Co. Manufacturers of

The Morris Sash Lock, Pat. Combined Sash Lift & Lock, Pat. Self-Locking Shutter Bar, And specialties in Builders' Hardware. 214 and 216 ELM STREET CINCINNATI, OHIO, U. S. A

GAUTIER STEEL DEPARTMENT

This Advertisement is Changed Every Week

CAMBRIA IRON CO.,

PHILIP E. CHAPIN, Gen'l Supt.

STEEL. WIRE and SPRINGS.

JOHNSTOWN, PENN.

N. Y. Store, - 81 JOHN STREET. Phila. Store, - 523 ARCH STREET.

MOULDING SAND. Albany Sand a Specialty. FOUNDRY FACINGS

Shovels, Riddles, Brushes, &c.

WHITEHEAD BROS. AMERICAN FACING CO. WM. WHITEHEAD, Treas., 517 W. 15th St., New York.

HOWARD EVANS CI A CMEDION O OO J. A. EMEKICK & CO.

1056 & 1076 Beach Street, PHILADELPHIA,

MANFRS' FOUNDRY FACINGS.

MOLDING SANDS and Foundry Supplies.

Established 1810.

PHILADELPHIA. Manufacturers, Importers and Dealers in

ODD AND REGULAR SIZES

ROOFING

Black and Galvanized Sheet Iron, Metals, Wire, Copper, Stamped Ware, Registers, &c.

Annual Review of the Metal Market for 1881.

The year 1881 may be called a prosperous one wherever metals are produced or consumed. While the output has been everywhere ample, consumption has had little difficulty in coping with it, in consequence of the general revival in active trade, only to a moderate extent assisted by speculation. In this respect—i. e., the comparative absence of speculation, except in Tin—1881 has differed materially from 1879, when in October a general greatly speculative effervescence took hold of nearly every article in the list, including metals, and kept it high during five successive months. This year the advance has been gradual since summer, and in all metals, al-ways excepting Tin, was based on an unexways excepting Tin, was based on an unexpected expansion of actual absorption, and therefore needed no speculation to help it. General business improved as well and as steadily in Europe—despite a rising discount—as in this country, as the year advanced, and all people in the trade feel and know that the movement was a sound one, deserving confidence. Nor are the prospects any less promising for the near future. On both sides of the Atlantic great impulse has been given to all sorts of public works and private enterall sorts of public works and private enter-prises. Capital reverts to useful undertakings and industrial values probably rest on a safer basis than they have done for eight years past. Much of this happy change is due, so far as Europe is concerned, to the quiet aspect of intermetional volities and to the greater of international politics and to the greater facilities of intercourse which have grown up during late years, and will receive important additions on the Continent in 1882.

COURSE OF PRICES AT NEW YORK, - CENTS PER

POUND.—IN GOLD.

July 1, Jan. 1, Nov. 1, Dec. 29, Dec. 29
1873. 1879. 1879. 1880. 1881.

1847. 1879. 1879. 1880. 1881.

1847. 1859. 1879. 1809. 1818.

1847. 1859. Domestic Lead.

Copper. The year opened with a quiet, but firm, The year opened with a quiet, but firm, feeling at 19½¢ for Lake Superior, the price gradually hardening, although sales did not exceed 750,000 fb, closing at 19½¢. It was shown that the production of Lake Superior reached, in 1880, no less than 40,000,000 fb, but that this quantity, large as it was, was absorbed by domestic consumption without difficulty. London opened with Chili Bars at £62, and best Selected £67. Charters on the West Coast have been only 41,500 tons in 1880, against 50,600 in 1870, 48,000 in 1878. at £62, and best Selected £67. Charters on the West Coast have been only 41,500 tons in 1880, against 50,600 in 1879, 48,000 in 1878, 44,000 in 1877. 49,000 in 1876, 48,000 in 1875, and 1874. During the month news was received from Peru that Lima was captured by the Chilians on January 17, and many people entertained hopes that the war would soon draw to a close, restoring Chili to full productiveness, the falling off in the output of Copper for 1880 amounting to 15,000 tons. The range of Chili Bars in London during 1880 had been £55 @ £70. 10/; in 1879, £54 @ £68; in 1878, £55 @ £66; in 1877, £64 @ £73. 10/, and in 1876, £71. 10/@ £81. 10/. February was again a quiet month, sales being restricted to 500,000 B at 19½\$\overline{e}\$ @ 19½\$\overline{e}\$, closing at the outside figure. The winter being of unusual severity, traffic in the interior was considerably hampered, causing great dullness in trade. Activity in the manufacturing regions, nevertheless, suffered little interruption during the month. In Europe Chili Bars kept steady at £62. 10/, it becoming evident that the fall of Lima would not hasten the conclusion of peace on the West Coast. Sales at New York in March were again limited to 1,000,000 lb, prices weakening a little as the month advanced, and giving way gradually from March were again limited to 1,000,000 lb, prices weakening a little as the month advanced, and giving way gradually from 19½¢ to 19½¢ @ 19½¢. Manufacturing, meanwhile, went on satisfactorily, the impression being strengthened thereby that prices would not unlikely be sustained by a continued large home demand, notwithstanding the reduced export of Copper. There had, indeed, been more Copper imported in 1880 than exported, the export only being 326,152 lb, against 13,402,332 in 1879, and 326,152 lb, against 13,402,332 in 1879, and the import 4,540,671, against 1,123,428. From Spain news was received that Rio Tinto Copper exportation had been about the same in 1880 as the previous year. In April the market became still duller, sales not the market became still duller, sales not exceeding 500,000 lb at 1834 @ @ 187\$ e, closing at the latter figure. The chief companies on Lake Superior at this time resolved to give relief to the situation by an export exceeding 500,000 lb at 18% & @ 18% & closhing at the latter figure. The chief companies on Lake Superior at this time resolved to give relief to the situation by an export sale of 2000 to 4000 tons at equal to 185 francs \$\frac{1}{2}\$ too kg., deliverable at Havre. London had meanwhile gradually declined to \$250 the District of the second of the spot and \$53,631\$ lb Ingot Copper, against 686,124 London had meanwhile gradually declined to \$250 the previous year; the re-export, 27,570, against 42,532. The London market meanwhile ran up rapidly from £66. 10/; Chili Bars and £66 best Selected. In May the nearness of a fresh supply from the Lake region caused manufacturers to withdraw from the market for the time being; in this manner their purchases were limited to 1,000,000 lb, the month opening at 18% \$\frac{1}{2}\$. News came to hand from Spain to the effect that, although the Rio Tinto Copper Company had produced the Rio Tinto Copper Company had produced no more Copper than in 1879, it had been able to declare a dividend of 8 % instead of 5 % for the previous season. England's import of precipitate and pyrites reduced to pure Copper was shown to have been as much as 34,652 tons in 1880, against 30,199 At this time the increase in Copper production in New Mexico, Arizona and Montana came to be much discussed at New York, and as certain contracts with that region came to be known, the market was unfavorably influenced by the expected additional supply from there during the month of June, when, from opening at 18 1/4 f, the price of Lake Superior suddenly dropped to 16 1/4 ft toward the close, with sales of 1,200,000 B.

London, meanwhile, gave way with Chili Bars to £58, the stock being 58,557 tons, against 65,000 tons the previous year, when the price was £66.

35,250 tons, against 48,350 during the pre-vious corresponding period, a decrease of about 13,000 tons. London thereupon re-covered with Chili Bars to £59, 10/. In August there was but a moderate amount of activity, which did not prevent the tendency from becoming gradually an upward one. Although sales did not much exceed 500,-Although sales did not much exceed 500,-000 lb, the price by degrees recovered from 16½% to 16½%. In the manufacturing districts greater animation began to manifest itself, stimulated by the low price of the raw material. No inclination to speculate in Copper, even at these low figures, was shown at the centers of distribution; in this manner the stinution representations. ner the situation remained sound, being de-prived of all artificial and exciting elements, the exuberance of production being dis-counted by the low value. The advance noticed was, therefore, a natural rebound from extreme temporary depression. During the ensuing month this inclination of the metal to right itself made further and notable progress, and while this was the case it began to attract more attention, transactions during the month reaching 1,500,000 b, taken by people who had not secured a supply in July, and the market thus by degrees rose from 16% early in September to 183% at its close. Producers at this time being relieved of all embarrassing surplus, present and prospective, became indifferent about effecting any further sales exterent about effecting any further sales except it were at still higher prices, and during the month the market recovered great firmness, the mere so since in London also quite a recovery in values occurred, Chili Bars rising from £59. 10/ to £62. 10/. The fact was that in England and France the statistical position had gone on improving slightly, in view of the reduced shipments from the position had gone on improving slightly, in view of the reduced shipments from the West Coast and the evidently threatening short supply from there as long as Chili should be compelled to keep a large army in the field in Peru and draw upon the mining population at home for enlistment in it. At the same time business in Europe gave unmistakable signs of growing improvement and the demand for Conner increased there and the demand for Copper increased there both for consumption and export. Thus a month or two had sufficed to radically change the position of the metal on both sides of the Atlantic; while there was no positive buoyancy in it yet, the metal trade began to look upon it as safe at prevailing rates. October, although rather less active than September at New York, sales hardly exceeding 1,000,000 fb, therefore evinced great steadiness within the range of 18¢ @ 18¼¢, while in London the price of Chin Bars advanced to £63. 10/. The improvement in Europe was not speculative, but wholly brought about by more doing and more reassuring statistics. There had meanwhile been exported from the United States during the first nine months 6.68; 788 h. of during the first nine months 6,685,788 lb of Copper, against 312,371 lb during the corresponding period of the previous year. In November a speculative movement in the London market carried Chill Bars there to 266. 10/, while in our own 1,200,000 B sold at hardening prices. Opening at 18½¢, the market closed at 19½¢. Consumption, in part for electrical purposes, was found to have increased enormously in the United States—so much so that it was estimated to have reached a figure which at the close of States—so much so that it was estimated to have reached a figure which at the close of the year would probably not fall short of 70,000,000 lb. On the other hand, it was predicted that the Territories west of the Mississippi River alone would turn out in 1882 something like 20,000,000 to 25,000,000 1882 something like 20,000,000 to 25,000,000 lb. Yet much confidence was expressed that the increase of consumption would hold good for 1882 likewise, in which event we should be found capable of absorbing even these promised extra supplies from new sources. In Europe it meanwhile became evident that for 1881 no greater Chilian supply could be counted upon than 35,000 tons, instead of the average output of late years of 45,000 tons, but it was, on the other hand, hoped that Rio Tinto might furnish the shortcoming in the shape of a 10,000-ton excess for 1881. The New York market developed increased strength, leading to quite an advance during The New York market developed increased strength, leading to quite an advance during the last month of the year. The leading producer on the Lake had virtually become the master of the situation and was thus enabled to dictate terms. Consumers resigned themselves to subscribe to the prices demanded, and opening in December at 1914 ¢, these gradually rose to 21¢, with of about 1,000,000 fb on the spot

Maine Maryland Missouri North Carolina Pennsylvania Vermont Wisconsin Total.... 56,855.648 VALUE OF INC

Bars to £58, the stock being 58,557 tons, against 65,000 tons the previous year, when the price was £56. Early in July a number of manufacturers, the leading ones among them, availed themselves of the dull feeling and depression to perfect extensive contracts with producers to the amount of some 20,000,000 fb, deliverable all the way to the close of the season at the extremely low price of 16¢, followed in the course of the month by some straggling sales of a couple of hundred thousand pounds at 16½¢ @ 16½¢. Meanwhile it was shown that the charters on the West Coast for the

Aron.

NEW YORK

98 William Street, New York.

Anthracite & Charcoal Pig Irons,

Wrought Scrap, Cut Nails, Copper,

BLOCK TIN, LEAD, SPELTER, ANTIMONY, NICKEL, &c.

HARRISON & GILLOUN

IRON AND METAL DEALERS,

558, 560, 562 WATER ST., and 302, 504, 306 CHERRY ST.,

NEW YORK.

have on hand, and offer for sale, the following: Scotch and American Pig fron, Wrought, Cast and Machinery Sorap Iron, Car-Wheels, Axles and Heavy Wrought Iron; also old Copper, Composition, Brass, Lead, Pewter, Zinc. &c.

OXFORD IRON CO.,

(B. G. CLARKE, Receiver,)

SPIKES.

J. S. SCRANTON, Sales Agent,

81, 83 and 85 Washington Street,

NEW YORK.

BURDEN'S

Burden Best"

Iron

Boiler Rivets.

The Burden Iron Company

Troy, N. Y.

ULSTER

BURDEN'S

American & English Refined Iron.

EGLESTON BROS, & CO.

166 South St., NEW YORK CITY.

DESPARD BROTHERS.

60 Wall St., New York, P. O. Box 764.

Importers of

New and Old Rails, Steel Blooms,

SCRAP IRON, &c.

Aron.

PITTSBURGH.

Aron. NEW YORK.

85, 87, 89 & 91 Elm St., New York. Iron and Stee

very description kept in stock.

Agents for Park Brother & Co.'s BLACK DIAMOND STEEL. All sizes of Cast and Machinery Steel constantly on hand.

CO.,

24 Broadway, New York City.

COMMON & REFINED IRON, Hoops, Rods, Scrolls, Bands, Ovals, Horse Shoe, Nail Rods, Steel, &c.

Orders promptly filled from stock.

ABEEL BROTHERS, Established 1765 by ABEEL & BYVANCK,

Iron Merchants, 190 South Street and 365 Water, N. Y.

ULSTERIRON A full assortment of all sizes constantly on hand.

Refined Iron, Horse-Shoe Iron, Common Iron, Band, Hoop and Scroll Iron, Sheet Iron,
Norway Nail Rods,
Norway Shapes,
Cast, Spring and Tire Steel, etc.

A. R. WHITNEY & CO.,

Manufacturers of and Dealers in Our specialty is in

Manufacturing Iron Used in the Con-struction of Fire-Proof Buildings, Bridges, &c.

Oarnegie Bros. & Co., Limited, Pittsburgh,
Pa., Wrought Iron Beams and
Channel Iron. Bay State Iron Co., Boston, Mass., Boiler Plate and Tank Iron.

Naylor & Co., Boston, Mass., Homogeneous Steel Plates and Compressed Steel Shafting. Plates Rolled to 100 Inches. Plans and estimates furnished, and contract made for erecting Iron Structures of every descrip tion. Books containing cuts of all Iron made sent on application by mail.

n application by mail.
Sample pieces at office. Please address
58 Hudson Street, New York.

BORDEN & LOVELL, **Commission Merchants** 70 & 71 West St.,

New York.

Agents for the sale of Fall River Iron Co.'s Nails, ULSTER IRON WORKS Bands, Hoops & Rods.

Borden Mining Company's

Cumberland Coals. WILLIAM H. WALLACE & CO.,

IRON MERCHANTS

Cor. Albany & Washington Sts. NEW YORK CITY. M. H. WALLACE.

SALE

TWO UNCUT ROLLS FOR A 16-INCH MILL.

ABOUT 10 TONS 1%-IN. SQUARE BAR IRON.

ABOUT 4 TONS 1%-IN. SQUARE BAR IRON.

ABOUT 7 TONS 1%-IN. SQUARE BAR IRON.

Also, a small lot of other sizes by

DANIEL W. RICHARDS & CO., 92 Mangin St., N. Y.

PASSAIC ROLLING MILL CO., ROLLED IRON BEAMS,

Channels, Angles, Tees, Merchant Bars, Riveted Work, Forgings, Eye Bars, &c PATERSON, N. J.

Room 45, Astor House, New York.

CUT NAILS,

Hot Pressed Nuts, Bolts, Washers, &c.

DOVER IRON CO.'S

BOILER RIVETS.

Boiler Brace Jaws, Socket Bolts, &c.

FULLER BROTHERS & CO

139 Greenwich Street, New York.

Aron. NEW YORK.

& WALLACE, A. B. Warner & Son, JOHN W. QUINCY & CO.

28 & 29 West and 52 Washington Sts. BOILER PLATE.

Beller Tubes, Angle, Tee & Girder fron Beller and Tank Rivets. Sole Agents for the celebrated

"Eureka," Pennocks, "Wawasset," Lukens,

Brands of Iron. Also all descriptions of Plate, Sheet, and Hasometer Iron. Special attention to Locomotive Iron. Fire Box Iron a specialty.

ROME MERCHANT IRON MILLS, ROME, N. Y., Manufacturers of the best grade of

Bar Iron, Bands and Fine Hoops. duced by hammer. Orders may be sent to the Mill or to J. O. CARPENTER, our Agent, at 59 John Street, New York



Old Rails, Scrap Iron, Crop Ends, Old Car Wheels, &c.

FOX & DRUMMOND. 68 WALL ST., NEW YORK.

MARSHALL LEFFERTS & CO.,

90 Beckman St., New York City, MANUFACTURER AND DEALER.

Galvanized Sheet Iron, 1st and 2d Qualities.

Galvanized Wire, Telegraph and Fence; Galvanized Hoop and Band Iron, Galvanized Rod and Bar Iron, Galvanized Nails, Galvanized Chain, Galvanized Iron CORRUGATED SHEET IRON For Roofing, &c., Galvanized, Plain or Painted.

Best Charcoal, Best Refined and Come SHEET IRON. Plate and Tank Iron,

C No. 1, C H No. 1, C H No. 1 Flange, Best Flange Best Flange Fire Box, Circles. BOILER IRON

Stamped and Guaranteed. All descriptions of Iron Work Galvanized or Tinned to order. Price list and quotations sent upon application.

JAMES WILLIAMSON & CO., SCOTCH AND AMERICAN

GIRON,

No. 69 Wall St., New York.

90 Broadway, New York.

Tuckerman, Mulligan & Co

CARMICHAEL & EMMENS 130, 132 & 134 Cedar St., New York.

IRON AND STEEL BOILER PLATE. Lap-Welded Boiler Tubes, &c., &c.

Agent for Otts' celebrated Cast Steel Foller Plates,
The Coatesville from Co., Pottstown Iron Co., The
Laurel Rolling Mills, and Union Tube Works; Wrought
Iron Beams, Angles, Tees, Rivets, &c.

B. F. JUDSON,

Importer of and Dealer in SCOTCH AND AMERICAN

Duty paid or in bond.

Pig Iron, Wrought & Cast Scrap Iron,

OLD METALS.

457 & 459 Water St., \ NEW YORK Manhattan Rolling Mill.

J. LEONARD, 445 to 451 West St., 177 & 179 Bank St.

NEW YORK, Manufacturer of

HORSE SHOE IRON, Toe Calk Steel, Rods, Ovals, Half Ovals and Flats.

DANIEL F. COONEY,
(Late of and successor to Jas. H. Holdane & Co.,
SS Washington St., N. Y.
BOILER PLATES & SHEET IRON,
LAP-WELDED HOILER FLUES,
Boiler Rivets, Angle & T Iron, Cut Nails & Spikes.
Agency for Glasgow Iron Co., Jos. L. Balley & Co.,
Pine Iron Works, Lebanon Rolling Mills, Chester
Pipe and Tube Co., Albany & Rens. Iron & Steel Co., 's
celebrated Boiler Rivets; Homogeneous Steel, Boiler
and Fire Box Plates.

HUGH W. ADAMS & CO., IMPORTERS OF

SCOTCH AND ENGLISH IRONS Agents for American Charcoal and Anthracite Furnaces,

56 Pine Street, New York. HUGH W. ADAMS.

Fron.



PATENT

Planished Sheet Iron. Patented March 14th. 1865; April 8th, 1873;

IMPORTED RUSSIA IRON, at a much less price. FOR SALE,

by all the principal **METAL DEALERS**

In the Large cities throughout THE UNITED STATES.

And at their Office 111 Water Street, PITTSBURGH, PA.

C. KANE. OLD RAILS, SCRAP IRON, STEEL. PIC IRON, BLOOMS. AND ORE. PITTSBURGH, PA.

Wm. Rea, Prest. F. B. Laughlin, Vice-Prest. UNION STORAGE CO. RECEIVE ON

Storage and Issue Warrants

PIG IRON, BLOOMS, INGOTS, MUCK BAR, RAILS, &c.

Difference relative to establishment
dis at furnaces solicited. General Office, PITTSBURGH, PA.

PITTSBURGH.



STEEL TOE CALKS.

Extra Quality Homogeneous Steel

SNOW SHOES

ROADSTER

PATTERN.

Cut Nails and Spikes, Plate and Sheet Iron, all descriptions.

STEEL PLATES, all descriptions.

SHOENBERGER & CO., Pittaburgh, KEYSTONE ROLLING MILL, Limited,

Manufacturers of

IRON.

Pittsburgh, - - Pa. Bonnell, Botsford & Co., Iron, Nails & Spikes.

YOUNGSTOWN, OHIO. MARSHALL IRON CO.,

Manufacturers of Best Charcoal Bloom, Best Refined & Commor

SHEET IRON.

Manufacturers of the Celebrated

Office and Works,

PITTSBURGH, PA.

LEECHBURG IRON WORKS. KIRKPATRICK & CO.,

SHEET IRONS, NATURAL GAS USED AS FUEL. OFFICE, No. 143 First Ave., Pittsburgh, Pa.



CORRUGATED AND CRIMPED IRON ROOFING & SIDING, Iron Buildings, Roofs, Shutters, Doors, Cornices, Skylights, Bridges, &c. MOSELEY IRON BRIDGE AND ROOF CO.,

S Day Street, Near Vork. R. Hope Hepburn. JOSEPH P. REED & CO., Iron Brokers and Commission Merchants,

265 S. Fourth St., Philadelphia. thracite Furnaces,

Y YOPK.

DANIEL L. COBB.

RIDGEVIEW COAL AND COKE CO., Latrobe.

J. D. BOYLE'S CONNELLSVILLE COKE.

MAGNETIC and HEMATITE IRON ORES a Specialty.

N. M. HÖGLUND'S SONS & CO., Stockholm. Swedish & Norway Iron of every description. Stock on hand at Boston, New York and Philadelphia. Importation orders a QUSTAP LUNDBERG, 38 Kilby st., Borton BERT POTTS, Philadelphia Agent, 234 & 236 N.

CHARLES HUBBARD, "Sheridan" & "Leesport Brands Pig Iron,

WHITE IRON (Anthracite & Bessemer) Stock for making strong castings.

"CHARCOAL PIG IRON,"

"Maiden Creek" and "Garrick" brands. Favorite brands of Scotch Pig Iron, In stock and to arrive.

OLD CAR WHEELS, BEST BRANDS. 46 Cliff St., New York City.

Rails. R General (JAMES

Mine

IXL I

Char

Soap

Riddle Sifters, Our in

An

Aron.

PHILADELPHIA.

Siemens' Regenerative

RICHMOND & POTTS, 119 S. Fourth St., PHILADELPHIA, PA.

Aron.

PHILADELPHIA.

HENRY LEVIS & CO., Manufacturers' Agents

For Iron and Steel Rails, Car Wheels, Boiler and Sheet Iron and General Hallway Equipments.

Old Rails, Axles, and Wheels bought and sold. 934 S. 4th St., Philadelphia.

Having enjoyed for over TWENTY-FIVE YEARS the reputation of producing the best quality of

RAILS,

have now an annual capacity of

150,000 Tons of Iron and Steel Rails, Splice Bars, &c. ADDRESS.

CAMBRIA IRON COMPANY,

No. 218 South 4th Street, Philadelphia.

Or at the Works, JOHNSTOWN, PA. Or LENOX SMITH, New York Selling Agent, 46 Pine St., N. Y.

PHŒNIX IRON

410 Walnut Street, PHILADELPHIA.

Beams, Deck Beams, Channels, Angle & Tee Bars, STRAIGHT AND CURVED TO TEMPLATE,
y used in the construction of Iron Vessels, Buildings and B

Largely used in the construction of Iron Vessels, Buildings and Bridges.

WROUGHT IRON ROOF TRUSSES, CIRDERS & JOISTS, PATENT WROUGHT IRON COLUMNS, WELDLESS EYE BARS,

and built up shapes for Iron Bridges.

REFINED BAR, SHAFTING, and every variety of SHAPE IRON made to order.

Plans and Specifications furnished. Address

NEW YORK AGENTS, MILLIKEN & SMITH, 95 Liberty Street.

BOSTON AGENTS, FRED. A. HOUDLETTE & CO., 19 Batterymarch St.

ALAN WOOD &

MANUFACTURERS OF

Patent Planished, Galvanized, Common. Best Refined, Cleaned and Charcoal Bioon

PLATE & SHEET IRON. No. 519 Arch St., Philadelphia, Pa.

Orders solicited especially for Corrugated, Gasholder, Pan and Elbow, Water Pipe, Smoke Stack, Tank and Boat Iron; Last, Stamping, Ferruie, Locomotive Headlight and Jacket Iron.

JAS. ROWLAND

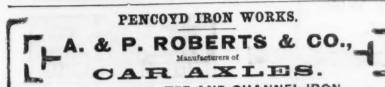
Kensington Iron, Steel & Nail Works,

920 North Delaware Ave., - PHILADELPHIA,

Anvil Brand Refined Merchant Bar Iron.

Also, the James Rowland & Co. Kensington Nails, cut from

heir Refined Anvil stock. Also, Plow and Cultivator Steel, Rounds Squares, Flats, Bands and Hoop Iron. Correspondence with Dealers solicited.



BAR, ANGLE, TEE AND CHANNEL IRON. No. 265 S. Fourth St., Philadelphia. Agents for the sale of Glamorgan Pig Iron.



Pier 45 North Delaware Avenue, PHILADELPHIA, PA.

Please send for Special Price List of our celebrated Machinery Facings

Mineral Facing, IXL Facing, Charcoal Facing,

Soapstone Facing,

X Facing, XX Facing, Anthracite Facing, Lehigh Facing,

Stove Plate Facing, Lead Facing, Bituminous Facing, Sea Coal Facing.

MANUFACTURERS OF FOUNDRY SUPPLIES. Riddles, Shovels, Steel Wire Brushes, Bellows, Screens, Buckets, Bristle Brushes, Mallets, Sand Sifters, Steel Wheelbarrows, Rammers. Our increased capacity insures prompt shipment of orders by telegram.

J. W. PAXSON & CO.,

MOULDING SAND.

ALLENTOWN ROLLING MILL COMPANY.

Rails, Bars, Axles, Shafting, Fish Bars (Plain and Angle), Spikes, Rivets, Bolts and Nuts, &c. Bridges and Turn Tables. General Office, 237 South Third St., Philadelphia.

JAMES C. BOOTH.

THOMAS H. GARRETT.

ANDREW A. BLAIR.

BOOTH, CARRETT & BLAIR, Analytical and Consulting Chemists,

919 and 921 Chant St. (10th St. above Chestnut St.), PHILADELPHIA, PA. Established in 1836.

Analyses of Ores, Waters, Metals and Alloys of all kinds. A special department for the

ANALYSIS OF IRON AND STEEL,

ditted with all the apparatus and appliances for the rapid and accurate analysis of Iron Steel, Iron Ores, Slags, Limestones. Coals, Clays, Fire Sands &c. Agents for sampling ores in New York and Raitimore. Price lists on application.

Aron.

Edward J. Etting,

IRON BROKER AND COMMISSION MERCHANT, 230 S. Third St., Philadelphia, Pn.

Pig, Bar and Railroad Iron.

OLD RAILS, SCRAP, &c.

Agent for the

MOUNT SAVAGE FIRE BRICK, The Allentown Iron Co. and

The Coleraine Furnaces. STORAGE WHARF AND YARD WARE AVENUE ABOVE CALLOWHILL STREET, ed by track with railroad.

Cash advances made on Iron.

Wesley Pullman,

407 Walnut St., Philadelphia, Exclusive SALES AGENT Chester Iron Co.'s Blue, Red and Hoft O R E S . Also celebrated "Brotherton" Ore.

T. HORACE BROWN. D. W. R. READ

D. W. R. READ & CO., FOREICN & NATIVE BESSEMER ORES

PICIRON ENGLISH FIRE BRICK. 2051/2 Walnut St., PHILADELPHIA.

142 Pearl St., 57 Gracechurch St., 67 S. Gay St NEW YORK. LONDON. BALTIMORE J. O. RICHARDSON, IRON COMMISSION MERCHANT. No. 232 Dock St., Philadelphia

Pig Iron, Railroad Iron and Iron Ores.

Sole Agent for the MONOCACY FURNACE CO. DEALER IN MOSELEM, ROCKHILL, WARWICK.

And other Favorite Brands SILVER GREY IRON A SPECIALTY.

J. W. HOFFMAN & CO., Iron Merchants & Railway Equipments 208 South Fourth St., Philadelphia.

able agents Glasgow Iron Co. and Pine Iron Works nufacturers of Muck Bar and all grades of Plate n. Celebrated "Glasgow" and "Plae" n. Gelebrated "Glasgow" and "Plae" naf tor fire boxes and difficult flanging. Pig and ron, Ralls and all shapes in Iron. Quotation on Bridge and Building Specifications.

WROUGHT IRON

Boiler Tubes,

Steam, Gas and Water Pipe.

Oil Well Tubing, Casing and

LINE PIPE.

Cotton Presses, Forgings, ROLLING MILL AND General Machinery.

READING IRON WORKS.

261 S. Fourth St., Philadelphia.

HEBERTON & CO.,

Selling Agents and Commission Merchants For the sale of Pig. Bloom, Plate, Bar, Serap, Galvanized, Black, Sheet, Pipe and Bailroad

IRON.
No. 333 Walnut St., Phila.
Charcoal Bloom and Pig a specialty.

IRON. SCRAP OF ALL KINDS A SPECIALTY.

First Quality Muck Bars. SHIMER & CO.,

Late of and successors to W. HUTTON & CO., 250 S. Third St., Philadelphia.

J. J. MOHR, Iron Commission

Merchant. No. 430 Walnut Street, Philadelphia.

Sole Agent for the Sheridan and Leesport Furnaces. Established 1837. A. PURVES & SON,

Scrap Iron, Metals and Machinery,

FRANCIS WISTER, A. A. HUTCHINSON & BRO CONNELLSVILLE COKE. ORES, Native and Foreign.

Kron.

CHARLES K. BARNS. JUSTICE COX. Jr. JUSTICE COX, JR. & CO.,

AGENTS FOR
CHICKIES, ST. CHARLES, MONTGOMERY
WARWICK, CONEWAGO AND KEYSTONE Foundry & Forge Pig Iron.

SHAWNEE ROLLING MILL CO., Limited, Best Quality Muck Bar. CATASAUQUA MFG. CO.'S Bar, Angle, Skelp and Sheet Iron.

Railroad Car Axles. New and Old Rails No. 333 Walnut St., Philadely PETER WRIGHT & SONS

307 Walnut Street, Philadelphia, 19 Broadway, New York, 44 Second Street, Baltimore,

Importers of German and English

Pig, Scrap, NEW AND OLD RAILS. And Iron Ore.

Italian and Spanish

CHARCOAL

CHILL-GRADED,

For Car Wheels, &c.

Railroad Supplies Generally.



LOCOMOTIVE AND CAR WHEEL TIRES,
Manufactured from the celebrated OTIS STEEL.

BRAND STANDARD.

Works at Lewistown, Pa. Office. 220 S. 4th St., Philadelphia, Pa.

L. & R. WISTER, IRON BROKERS

Agents for the Clearfield Fire Brick Co.'s



KEYSTONE HORSE SHOE CO., 17th and Clearfield Sts., Philadelphia, Pa.

Manufacturers of the Keystone Patent Solid Steel Caik Horse and Mule Shoes.

These Shoes are made of superior iron and steel, completely finished and ready for cold shoeing; nave clip and solid steel cais. The holes are punched through at the proper angles and free from burrs. Same number of Shoes per keg as in kegs of unfinished shoes.

J. F. BAILEY & CO.,

216 South 4th St., Philadelphia. 52 Wall St., (Room 8) New York.

Selling Agents

ATKINS BRO'S-BEAMS, CHANNELS, RAILS, &c. A. & P. Roberts & Co.-Car Axles, Plates, Channels, Tee,

Angle and Bar Iron. WILLIAM McILVAIN & SONS-Boiler, Ship and Bridge Plates. BERWICK R. M. BARS AND SHAPE IRON.

Advances on Consignments of Old Material and sales promptly made.

BRADLEE & CO., 816 Hichmond Street, Philadelphia.

Manufacturers of Steel Chain and the Celebrated 'D. B. G."

All Chains carefully tested and examined and certificate of proof furnished. Dredding, Mining and Crane Chains. Rafting Chains, Toggles, Eye Bolts and Log Dogs.

5 while London stood £93, and Singapore \$28.25. It was shown that the world's supply in 1880 had been 40,000 tons, against 38,000 in 1879; 36,000 in 1878, and 34,000 in 1877, while in 1873 it had only been 26,000, an increase of 50 % in seven years; if, therefore, consumption had not so materially increased in this country, it would have been difficult to come with this rapidly expanded. difficult to cope with this rapidly expanded production, and the price might have gone unprecedentedly low for a time. Fortunately for producers, considerably reduced as consumption has been among us in 1881, it has sumption has been among us in 1881, it has still been large enough to prevent much of a decline till later on speculation took charge of the metal. In January some conflicting interests here and in Europe kept prices fluctuating—at New York between 19¢ and 205¢, and in London between £90 and £93. 10f. The import of Tin into the United States in 1880 was 13 34¢ tons worth \$6 States in 1880 was 13,346 tons, worth \$6,-120,316, against 10,186 tons, worth \$3,605,614 in 1879. From the Straits alone there were states in 1830 was 13,340 tons, worth \$3,605,614 in 1879. From the Straits alone there were shipped to the United States in 1880, 8550 tons, against 7300 in 1879; 4140 in 1878, and 4204 in 1877, having more than doubled since 1878. On March 1 the visible supply here was found to be reduced to 3700 tons, in consequence of light shipments from the Straits this way in February, which kept our market steady during the latter month within the range of 20¢ @ 20¼¢, while in England and Holland, on the contrary, statistics had grown to become more and more unfavorable, having increased 1624 tons in a single month, due to large shipments thither from the Straits and Australia. London, under these circumstances, receded in February to £88. In March the position of Tin on this coast improved still more, deliveries to consumption during the month aggregating 1000 tons, the visible supply at its close being 300 tons less than the previous one, while the price varied little from 20¢. The spring campaign now drawing near, a better feeling began to prevail, without, however, attracting any speculative demand, the outlook in Europe FOR SALE BY

ALFRED EARNSHAW,

203 Walnut Place, PHILADELPHIA.

BLAKEY & WALBAUM,

206 S. Fourth St., PHILADELPHIA.

SPECIALTIES:

NEW AND OLD RAILS,

BLOOMS, BESSEMER PIG,

Spiegeleisen Iron Ores

AND

AND

AND

AND

AND

AND

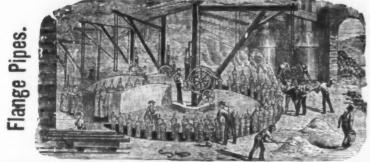
The decling began to prevail, without, however, attracting any speculative demand, the outlook in Europe still being doubtful and the price of Straits remaining £88. During the month of April consumption remained as steady as during the preceding one, 1000 tons again being taken at firm prices, the metal being looked upon even more favorably, Straits being worth 20 ½ ¢ and the visible supply toward the close not exceeding 1400 tons. In England and Holland statistics had at length improved a little, the visible supply being on May 1, 14,299 tons against 14,780 on April 1.

While Tin was thus well calculated to inspiro more confidence both here and in Europe, the spring trade proved a sore disappointment on both sides of the ocean, causing a feeling of great apathy in May and a decline from 20 ½ ¢ to 19 ½ ¢ at New York, and to 100 km in Europe, which was the close of the price of Straits remaining £88. During the month of April consumption remained as steady as during taken at firm prices, the metal being looked upon even more favorably, Straits being worth 20 ½ ¢ and the visible supply toward the close not exceeding 1400 tons. In England and Holland statistics had at length improved a little, the visible supply being on May 1, 14,299 tons against 14,780 on April 1. feeling of great apathy in May and a decline from 20¼¢ to 19½¢ at New York, and to £86. 10/ in London. The declining tendency on this side was even precipitated by resales effected by discouraged holders for a risg, June thus opened with Tin in a very du'll mood. The depression thus caused up n markets statistically in reality improved it, and provoked a concerted speculative move-ment for a rise on both sides in the course of the month, which carried the price again to 20 \(\frac{1}{2} \) \ while the visible supply on July I had swelled again at this center to 3480 tons. July did again at this center to 3480 tons. July did not, however, develop much activity on either side; the price here remained steady at 20½¢, and £90 in London. Neither side seemed to be prepared to respond to a speculative movement unsupported by an active consumptive demand. The visible supply stood on August 1, 3770 tons, the deliveries in July having been only 650 tons. As at this time it was shown that during the first six months of the year there had been shipped to the United States only 2049 tons of Tin, against 4200 during the corresponding period of 1880, the metal at ruling figures was looked upon as metal at ruling figures was looked upon as tolerably safe, notwithstanding the decrease tolerably safe, notwithstanding the decrease in consumption. The price consequently recovered among us in August to 21½¢, and in London to £92; the deliveries to consumption became a little larger, being 880 tons here and 2020 in Europe, while the shipments to Europe and America during the month amounted in the aggregate to 2150 tons only. September, while again showing fair deliveries on this side of 900 tons, leaving us with a visible supply at its close of 3900 tons, remained unexcited, but advancing to 21½¢. In Europe, on the contrary, the speculation and upward movement made further progress, pushing the price of Straits to £96. ress, pushing the price of Straits to £96. Shipments from the Straits settlements to the United States during the first eight months had been 3206 tons against 5952 in 1880; 3810 in 1879; 2475 in 1878; 2080 in 1877, and 1513 in 1876, showing, after all, a modand 1513 in 1670, showing, after all, a moderate supply thence so far in 1881. Consumption took in October only 700 tons here, and, as the shipments had meanwhile become larger this way from the Straits, Australia and Leve and L come larger this way from the Straits, Australia and Java, say 2500 tons affoat on November I, the visible supply reached 5000 tons. The speculators for a rise operating at London and New York, simultaneously or alternately as circumstances commanded, at this time clearly perceived that it would be imperative to first get control, if possible, of the market here and at Boston, and thus improve the statistical position here if need be the market here and at poston, and thus improve the statistical position here, if need be, by shipping a considerable amount of Tim from here to Europe. The ugly feature of a large visible supply would then disappear, the more so as they determined to run up prices in the Straits to such a point as to put a stop to shipments this way altogether. While this was preparing here, they began to run up the price in London and Holland. This was facilitated by some large purchases that had been made in the latter country by solid capitalists, who, thinking well of the metal, resolved to hold it out of the market for some time. Although in one respect the period chosen was unfavorable, inasmuch as it concided with the heaviest Tin shipment of the year from Austalia during the wool season, the speculation proved a complete success so far as obtaining control of the market and running up the price was concerned, a success all the more astouishing as from a

eneral Foundry Work

A. H. McNEAL,

BURLINGTON, N. J.



PIPES IRON

FOR WATER AND GAS.

ESTABLISHED IN 1848 SINGER. Limited.

PITTSBURGH, PA. MANUFACTURERS OF ALL KINDS OF HAMMERED AND ROLLED

Warranted Equal to any Produced.

BEST REFINED TOOL CAST STEEL For Edge and Turning Tools, Taps, Dies, Drills, Punches, Shear-Knives, Cold-Chisels and Machinists Tools generally.

SAW PLATES For Circular, Mulay, Mill, Gang, Drag, Pit and Cross-Cut Saws.

Sheet Steel

For Springs, Billet Web and Hand Saws, Shovels, Cotton Gin Saws, Stamping Cold, &c., &c. SIEMENS-MARTIN (Open-Hearth) PLATE STEEL

For Botlers, Pire-Boxes, Smoke Stacks, Tanks, &c. ill our Plate and Sheet Steel being rolled by a Patented Improvement 1s unequaled for surface exactness of gauge.

ROUND MACHINERY CAST STEEL For Shafting, Spindles, Rollers, &c., &c.

File, Fork, Hoe, Rake, R. R. Frog, Toe-Calk, Sleigh-Shoe and Tire Steel, &c.;

Cast and German Spring and Plow Steel.

"Iron Center" Cast Plow Steel,
"Soft Steel Center" Cast Plow Steel,
"Bold Soft Center" Cast Plow Steel,
Steel Forgings made to order.

"Finished Rolling Plow Coulters with Patent Screw
Hubs attached.
Agricultural Steel cut to any pattern desired.

Represented at 59 Beekman St., New York, and 417 Commerce St., Philadelphia, by HOGAN & BURROWS, Gen'l Agents for Eastern and New England States.

THE MIDVALE STEEL COMPANY CRUCIBLE AND OPEN-HEARTH STEEL

TIRES and AXLES



Tool, Machinery and Spring Steel Castings and Forgings.

Works and Office, Nicetown, Philadelphia, Pa.

Warehouse, 12 N. 5th St., Philadelphia, Pa.

THE PHILADELPHIA STEEL FORGE, Office, Frankford, Philadelphia, Pa. CHAS. I. WICKERSHAM, & CO., No. 154 Lake Street, Chicago.

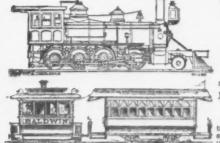
> ESTABLISHED 1847. A. WHITNEY & SONS, PHILADELPHIA,

CHILLED RAILROAD WHEELS For every kind of service, including Street, Mine and Lumber Tramscays, bored or on axies. Chilled castings made to order.

PENNSYLVANIA STEEL COMPANY Steel Rails, Frogs, Crossings & Switches, Forgings for Piston Rods, Guide Bars, Wrist Pins and Machinery Purposes.

Works at Baldwin Station, Pennsylvania Railroad, near Harrisburg, Pa. Address all orders to PENNSYLVANIA STEEL COMPANY, 208 South Fourth Street, Philadelphia





BURNHAM, PARRY, WILLIAMS & CO., Proprietors,

LOCOMOTIVE ENGINES of every Description.

Catalogues, photographs and estimates fur nished on application of customers. NOISELESS STEAM MOTORS. For city and suburban Railways.

These machines are nearly noiseless in operation; show no smoke with the use of anthractic coal or coke as fuel, and show no steam whatever under ordinary conditions of service. They can be run at two or three times the speed of herse cars and draw seems. Grounds with full particulars supplied.

ROANE IRON COMPANY, CHAS. G. LUNDELL

Pig and Railroad Iron. CHATTANOOGA,

L. HERNSHEIM, Importer and Commission Merchant,

NEW AND OLD STEEL AND IRON RAILS, STEEL RAIL BLOOMS, Bessemer and Spiegel Iron, Ferromanganese.

Sole Agent for the United States for the AND IRON WIRE RODS E.B.C HUTTENBERG (AUSTRIA) IRON WORKS,

CHARCOAL PIG IRON FOR CHILLED CAR WHEELS, For the Siemens-Martin and Crucible Steel Manufacture.

EXTRA SOFT CHARCOAL STEEL BLOOMS, BILLETS AND RODS FOR COLD RIVETS, &c. Superior Brill. Scythe, Tool and Die Steel Manuck from Charcoal Iron, de., de.

BRITTON IRON AND STEEL CO., MANUFACTURERS OF

IRON AND STEEL BOILER PLATE, Tank, Bridge and Ship Plates,

BLACK AND GALVANIZED SHEET IRON. CLEVELAND, O. Works foot of Wason St., cor. L. S. & M. S. R. R.

JACKSON IRON COMPANY,

Manufacturers of Fayette Pig Iron (L. S. Charcoal), Stewart Pig Iron (Estuminous Coal and Coke), Malleable and Car Wheel purposes.
Also, Hammered Blooms, Billets and Muck Bar, extra iow in phosphorus, for Siemens Martin and Crusible Steel. Miners of Jackson (Lake Superior) Iron Ores.

FAYETTE BROWN, Gen. Agent. HARVEY H. BROWN, Asst. Gen. Agent. Offices, 130 Water St.

HARVEY H. BROWN & CO.,

CHAMPION IRON CO., LAKE SUPERIOR IRON CO. } Lake Superior Iron Ores.

Dealers in Pig Iron, Iron Ores and Old Rails. CLEVELAND, OHIO. Offices, 130 Water Street,

ORFORD NICKEL AND COPPER COMPANY,

THOS. J. POPE & BRO., Agents, 292 Pearl St., New York. Copper Ore, Mattes or Bullion purchased. Advances made on consignments for refining and sale

CHARLES HUBBARD, 46 Cliff St., New York City HEAVY STEEL AND IRON FORGINGS. For Marine and Stationary Engines

Homogeneous Steel Boller Plate, "Nashua" Brand. Best YORKSHIRE BAR, "TAYLOR" IRON, for Stamped Work, Screws, etc., etc. MUSHET SPECIAL TOOL STEEL, requires neither tempering nor hardening.



Is adopted by railroads, by stock raisers and by farmers generally, on account of its superior style fourb, giving STRENGTH AND LIGHTNESS, and always holds its sharp point. In the

BARB WIRE LAW SUITS

ecision has been rendered **sustaining all the Patents**; and all manufacturers, dealers and re infringing will be held liable for damages.

We do not sell to jobbers, but want one reliable retail dealer in each town.

THORN WIRE HEDGE CO., 15 to 21 N. Clinton St., Chicago.

IRON AND STEEL DROP FORGINGS

All shapes, small and large, including
Gun, Pistol, Wrench Bars, &c. Also, Die Sinking. Manufacturers also of
Bricklayers', Moulders', and Plasterers' Tools, Saddlers'

WILLIAM ROSE & BROS., 36th & Filbert Sts., West Philadelphia.

HOOPES & MERRY. "LION" Brand or B. B .- "PHŒNIX" Brand or Best Charcoal

GALVANIZED SHEET IRON 539, 541, 543, 545 and 547 West Fifteenth Street, New York.
C rrug-led Sheet Iron. Black or Galvanized. All kinds of Ironwork. Tinned or Galvanized.

BIRMINGHAM ROLLING MILL CO., MANUFACTURERS OF

BAR, BAND AND HOOP IRON.

T-RAILS AND SPLICE BARS.

Also, Street and Tram Rails.

Head Office, Louisville, Ky.

Birmingham, Alabama.

We solicit inquiries for Bar Iron and small Rails. Orders filled promptly. C. W. LEAVITT, 137 Broadway, Room A, 2d Floor, New York.

NEW AND OLD

RAILS AND RAILWAY EQUIPMENT. General Agent ALLENTOWN ROLLING MILLS. | Agent for PARDEE CAR & MACHINE WORKS.

THE COMBINATION IRON CLAD STEEL HORSE SHOE CO.,
SELF WELDING STEEL TIRE CO.,
BILLET AND WIRE CO.,
BILLET AND WIRE CO. THE COMBINATION IRON CLAD STEEL HORSE SHOE CO., SELF WELDING STEEL TIBE CO., BILLET AND WIRE CO., BILLET AND WIRE CO., Sole and exclusive manufacturers of "Wheeler's Combination" Shoes, Shoe Bars and Toe Calks. Tire and Silver. Tubes for sliding one within the other man silver. Tubes for sliding one within the

No. 7 Exchange Place BOSTON. Mass. REPRESENTING Ekman &Co. GOTHENBURG, SWEDEN.

E. W. CLARK & Co.

Bankers and Stock Exchange Brokers, No. 35 South Third St., Philadelphia.

CLARK, POST & MARTIN,

No. 34 Pine St., New York, Bankers and Railway Commission Merchants, Importers of

Pig Iron, New and Old Rails, Scrap Iron, &c.

W. S. MIDDLETON, Broker in Machinery & Iron

FORSTER'S CRUSHER & PULVERIZER, The best in marke W. S. MIDDLETON, 52 John St., N. Y.

s. Cheney & son Manlius, N. Y., Small Gray Iron Castings.

We warrant our work fer smoothness and finish.

NORTH BROS.

93d and Race Sts., Philadelphia. Fine Light and Medium-Weight GRAY IRON CASTINGS to order.

Correspondence solicited.

JNO. J. SHIPHERD, INVESTMENT BANKER.

Lake Superior Iron Mining Stocks, CLEVELAND, OHIO.

MOSES GOLDSMITH & SON CHARLESTON, S C. Wholesale dealers in

METALS, IRON RAGS, And all kinds of Pa , Stock. We invite corres ; cence.



WM. McFARLAND, Iron and Brass Founder. TRENTON, N. J.

Chilled Cast Wire Dies a Specialty. Any size or style made at short notice. MACHINERY FOR

Straightening and Cutting Wire Of all Sizes to any Length. Send for Catalogue.

T. J

PATID.

NEW

SEND SEND FOR

FOR S

LE

RI

Imp

JOHN ADT, New Haven, Conn., U. S. A.

CHAMPION WEATHER STRIPS. The Best in the Market.

For Sale by all Hardware Dealers.



Also manufacturers of Wood Carpet, Show Case, and Cabinet Moldings, &c.

DENNIS & CO., 167 Madison St., CHICAGO, ILL. Factory, 337 and 330 W. Lake St.





S. STANDARD SCALES 562 Washington Street, BUFFALO, N. Y.
of J-ton, platform 7x14 ft., \$55.00. 4-ton, 5x14 ft., \$65.00

WEEKS & RAY, Manufacturers. THE

Gilbert & Bennett Mfg. Co., GEORGETOWN CONN.,

IRON WIRE, SIEVES AND WIRE CLOTH,

Power Loom Painted Screen Wire Cloth, GILBERT'S RIVAL ASH SIEVE

Galvanized Twist Wire Netting, THE UNION METALLIC CLOTHES LINE WIPE. - 49 Cliff St., New York Warehouse,



Manufacturer of Patented Japanned, Tinned First and Second

Bird Cages. Wires on both classes astened without solder. The cheapest and mos



DUNBAR BROS.

Clock Springs and Small Springs BRISTOL, CONN.

The Sugar Maker's Friend Twenty-five per cent. mere sugar and a better quality from 90 Sugar and a better quality from POST'S PAT. EIREK AS AF SPOUTS than from any others, is the verdict of over the sugar Makers that use them. Their perfect working with satisfaction is guaranteed. Only a trial is needed to convince their august a trial is needed to convince their a

CLOTHES WRINGERS.



T. J. ALEXANDER, Manager,





RIEHLE BROTHERS, St., Philadelphia Improved Power & Hand

LEONARD BROS., Scrapton, Pa.





The above cuts (Fig. 259) represent our PATENT AQUAPULT, so valuable a Hand Force Pump at certain competitors have made bold to infringe on same, and even to resort to the crime of plagfar in using our cuts and trade-mark name of article to decoy customers away from our manufactured invention; and we caution the trade and customers against purchasing this article when not made ourselves, as we intend to protect our rights under our patent.

WE ARE THE ORIGINAL AND FIRST INVENTORS OF THIS STYLE OF PUMP, AND HOLD VALID LETTERS PATENT ON SAME, AND ANY STATEMENT THAT IT HAD BEEN IN THE MARKET PREVIOUS TO OUR MANUFACTURE OF SAME IS OF COURSE ABSURD AND WITHOUT THE SLIGHTEST FOUNDATION IN TRUTH.

W. & B. DOUGLAS, Middletown, Conn.

BRANCH WAREHOUSES: 85 and 87 JOHN STREET, NEW YORK, and 197 LAKE STREET, CHICAGO, ILL.

UNION MANUFACTURING CO

Skinner's Patent Combination Chuck. UNIVERSAL, INDEPENDENT AND ECCENTRIC.



By sliding a stud on the back of chuck it is instantly changed from Universal to Inis instantly changed from Universal to In-dependent, and vice versa. Each Chuck is guaranteed perfect. All parts are made interchangeable. Only the very best ma-terials used in their construction. Reversible or special jaws furnished when desired. We also manufacture

Plain and Ornamental Butts, Single and Double Acting Spring Hinges, Union Coll Door Springs, Galvanized Pump Chain, Patent Rubber Buckets,

Wooden Well Curbs, Wood Tubing, Iron and Brass Pumps, Patent Copper Pumps, Hydraulic Rams, Power Pumps, &c., &c., &c.

Write us for prices

UNION MANUFACTURING CO., Warehouse, 96 Chambers St., New York. NEW BRITAIN, CONN.



BUCK BROTHERS, Millbury, Mass.

Shank. Socket Firmer and Socket Framing Chisels, PLANE IRONS.

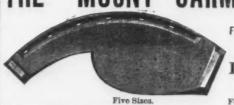
CAUTION.—Buyers should be on their guard and not have inferior goods palmed on them by un ricipled persons, who represent them as our make. Our tools are stamped "BUCK BROTHERS, and our labels have on our trade-mark, also "Riverin Works."

HENRY'S PATENT UNIVERSAL CAN OPENER.



The verdict of all: "The best in the market; it cannot be

SCHAAL & HENRY, Factory, 30 Market Space; Office, 3 Second Street, Baltimore, Md.



Steel Toe Calk. FINISHED READY FOR NAILING ON. WARRANTED Best and Cheapest Shoe Made. IVES, WOODRUFF & CO.

MOUNT CARMEL, CONN. For sale by dealers in blacksmiths' supplies.

NATIONAL HARDWARE & MALLEABLE IRON WORKS. Lehigh Avenue, American and Third Streets, Philadelphia.

MALLEABLE, FINE GRAY IRON AND STEEL CASTINGS made from patterns to

order. Special attention given to Tinning, Bronxing, Coppering, Japanning and Fitting. A large line of Carriage and Wagon Castings constantly on hand for the trade.

SEAMLESS DRAWN BRASS & COPPER TUBES, and futures some 400 tons, opening at 41/26, and futures some 400 tons, opening at 41/26, and gradually giving way to 41/26, at which latter figure the market evinced some firmness. Chief operators at New York rather helped in precipitating a fall, evidently with

THOMAS DEVLIN & CO., BRIDGEWATER IRON CO., Bridgewater, Mass.

don and New York cliques of operators, an artificial famine had thus been engineered in a metal which of all had the least intrinsic strength to warrant a great advance. That from the commencement the solid metal trade strength to warrant a great advance. That from the commencement the solid metal trade here was decidedly hostile to this move, which was to spring a mine upon them, could easily be perceived, nor did they encourage it or meddle with it in the least, taking no further interest in the metal than their current requirements forced them to do. This did not prevent them from admitting that the thing had been cleverly done, more so, indeed, than anything in the way of speculative manipulation that had been done in the line for a good many years past. During December everything coincided to give speculators for a rise complete control of the markets on both sides. The Dutch sale of November 30 averaged 64 guilders per 50 kg., and with sales on the spot and to arrive here of some 800 tons, the price was forced up from 22½\$\phi\$ to 24½\$\phi\$. Shipments from the Straits settlements to the United States during the first 9 months had been 4083 tons, against 6444 tons in 1880; 4700 tons in 1879; 2615 in 1878, and 2470 in 1877. Between this country, England and Holland the November deliveres in 1890; 4700 tons in 1879; 2615 in 1878, and 2470 in 1877. Between this country, England and Holland the November deliveries had been fair—some 2800 tons. But the greatest strength of the market was prospective for the coming month, when with the shipments made from here and the absence of exports this way from the Straits in November and December, a pinch was to be foreseen. From Holland it was correctly remarked that the future of Tin values would more than at any previous time depend on some 3000 tons at fluctuating figures within

STRAITS TIN. Sept. '78..13½¢ @ 13½¢ May.
Oct. '78..13½¢ @ 15½¢ June,
Nov. '78..15½¢ @ 17½¢ June,
Dec. '78..15½¢ @ 17½ Juny,
Dec. '78..15½¢ @ 16 ¢ Ag.
Jan. '79..14½¢ @ 15½¢ Oct.
Mar. '79..14½¢ @ 15½¢ Nov.
April, '79..14½¢ @ 15½¢ Nov.
April, '79..14½¢ @ 15½¢ Nov.
April, '79..14½¢ @ 15½¢ Feb.
July. '79..14½¢ @ 15½¢ Jan,
June, '79..14½¢ @ 15½¢ Feb.
July. '79..14½¢ @ 15½¢ May.
Oct. '79..15½¢ @ 15½¢ May.
Oct. '79..15½¢ @ 15½¢ May.
Dec. '79..22 ¢ @ 24 ¢
De AVERAGE PRICE OF LAMB AND FLAG IN ENGLAND. PER TON.

shows the course of prices at New York:

GUILDERS, PER 50 KG,

1.70

374

50 45

1.70

374

50 45

1.70

374

50 45

1.70

374

50 45

1.70

374

50 45

1.70

374

50 45

1.70

374

50 45

1.70

374

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 45

50 4 GUILDERS, PER 50 KG. Jan. 1 Feb. 1 Mar. 1 April 1 May 1. June 1. July 1.

Lead.

Lead.

Opening quiet and weak, the month of January did not promise much of a revival at first, but as the month advanced it surpassed expectations greatly. Early in the month Common Domestic stood \$4.30, a price low enough to attract purchases for consumption, which took place in the course of it to the extent of 3500 tons spot and tarrive, the bulk all the way up to \$4.75, bringing the price up to 5¢ at the close, while 700 tons Refined simultaneously changed hands at \$5.25 This, at any rate, showed that the increased production, which was proved to have been something like 90,000 tons in 1880, did not frighten consumers, but that they were ready to buy Lead between 4¢ and 5¢ extensively so early in the season, in hopes of a good spring campaign. From San Francisco there has been shipped by sea in 1880 altogether 9276 tons, of which 9100 to New York: the previous year the total shipments had been 6413 tons, of which 6162 for New York. The import of Lead into England had been 96,000 tons in 1880, against 102,100 in 1879, and 100,233 in 1878, while there had been exported 33,000 tons.

Heaving them little to choose from, the price meanwhile fluctuating between 4¢¢ and 5 for New York. The import of Lead into England had been 96,000 tons in 1880, against 102,100 in 1879, and 100,233 in 1878, while there had been exported 33,000 tons.

Heaving them little to choose from, the price and angargegate sales during the month now exceeding 1000 tons. Yet it was confirmed that consumption was going on most satisfactorily, and that in this respect the most order that consumption was going on most satisfactorily, and that in this respect the most order that consumption was going on most satisfactorily, and that in this respect the most order that consumption was going on most satisfactorily, and that in this respect the most order that consumption was going on most satisfactorily, and that in this respect the most order that consumption was going on most satisfactorily, and that in this respect the most order. At the same t into England had been 96,000 tons in 1880, against 102,100 in 1879, and 100,233 in 1878, while there had been exported 33,000 tons, against 37,007 and 34,385. England's production from native mines was 60,000 in 1880, against 51,635 in 1879; 58,020 in 1878; 61,403 in 1877, and 58,667 in 1876. In 1871 it had been 69,037 tons. In February some demand developed leading to the sale of 1500 tons Domestic and 500 tons foreign, the former at \$4.90 @ \$4.95. The import of Pig Lead into the United States in 1880 had been 2884 tons, against 1633 in 1879. The export of Pig Lead from Spain in 1880 was 92,400 tons, against 100,336 tons the previous year. of Pig Lead from Spain in 1880 was 92,400 tons, against 100,336 tons the previous year. In March the long winter began to give some misgivings as to whether there would after all be much of a spring trade in Lead, and a feeling of apathy gradually spread. Still, considering the circumstances, the sales were fair, summing up some 2000 tons during the month at \$4.82\frac{1}{2}\$ early in the month, and thence downward, as the languid feeling became intensified, to \$4.62\frac{1}{2}\$. According to advices received from Europe at the feeling became intensified, to \$4.62½. According to advices received from Europe at the time the Larium Mines in Greece had turned out in 1880 some 6000 tons of Lead. In April the apprehensions about a failure of the spring trade in Lead were more and more confirmed, but a pretty large business was done nevertheless, summing up between spot and futures some 4000 tons, opening at 456¢ signs of weakness soon, however, manifested themselves on the other side. In February

fallen at these high prices to 700 tons in No- a view to re-enter the market at the proper fallen at these high prices to 700 tons in November, and 300 tons were shipped, leaving a visible supply on hand on December 1st between stocks and afloats of 3850 tons. But the virtual cessation of shipments this way from the Straits constituted in November and December the strongest feature in this speculation, so far as our market was concerned. By a well-concerted movement between London and Consider the strongest feature in this speculation, so far as our market was concerned. By a well-concerted movement between London and Considered in Europe. During the month of May some holders and consignees of Lead made a descent of the strongest feature and descent of the strongest feature and consignees of Lead made and descent of the strongest feature and consignees of Lead made and descent of the strongest feature and consignees of Lead made and descent of the strongest feature and consignees of Lead made and descent of the strongest feature in this summer months a tardy revival might take place. German production in 1880 proved to have been \$6,000 tons, against proved to have been \$6,000 remarked that the future of Tin values would more than at any previous time depend on the Australian supply, and that meanwhile the transfer of Tin from America to Europe would soon make itself felt in the latter part of the world. London opened in December at £105 @ £106, and gradually hardened to £105. Io/@£110. Io/, spot and futures.

The actual net import into the United States during the first 9 months had been III,185 cwts., against 214,407 in 1880. The following shows the course of prices at New York: put forward at this time to the effect that the consumption of Lead in the United States in 1881 would very likely not fall much short of 120,000 tons. At any rate, the supply was rather slim in September, both at New York and Newark, and while the sales were thus restricted to 2000 tons during the month, the restricted to 2000 tons during the month, the price rose from \$4.95 to \$5.37½. Some few imports were made from Europe at the time. In London, English and Spanish Pig had advanced to £15.5/cost, freight and insurance, against £14.7/6, the lowest previous point. The cable, indeed, reported favorably from Europe. Views were expressed that the demand for Lead at New York would probably not abate much for the balance of the year. While in October London continued advancing, rising to £15.17/6, cost, freight and insurance, the market here began to flatten somewhat, declining from 5½\$/\$/\$/\$/\$ to 5\$/\$, the dealings being restricted to plied or waiting to be so by some Lead on the way from California. At the same time,

£ s. d. 53% to 5%, the dealings being restricted to filling some moderate urgent requirements, the larger consumers either still being supavailable Lead remained in scanty supply. The net import into the United States during the first eight months had been only 4,077,-296 lb, against 6,389,657 in 1880. In November London rose 10/, but at New York it proved difficult to revive the market much. From California some Lead arrived, filling the most urgent requirements of some consumers, while others were averse to operating on a larger scale, the more so as Lead did not abound, leaving them little to choose from, the pric meanwhile fluctuating between 4 1/8 \$\psi\$ and 5 1/4 \$\psi\$

AVERAGE PRICE OF

IN THE LONDON MARKET. - PER TON

£ 8. d. 16 5 10 1876 14 18 7 1875 16 17 4 1874 20 13 0 1880-1874. IMPORTS INTO AND EXPORTS FROM GREAT BRITAIN Imports. Tons.

AUBURN FILE WORKS, Superior Hand-Cut LES AND RASPS,

EVERY FILE WARRANTED. MADE FROM IMPORTED STEEL. **FULLER BROS., Sole Agents,**

89 Chambers and 71 Reade Streets, N. Y.



McCAFFREY & BRO.,

PENNSYLVANIA FILE WORKS,

Philadelphia, Pa., U. S.



Manufacture and keep in stock a full line of **FILES** and **RASPS** only, for which we claim special advantages over the ordinary goods, and ask domestic and foreign buyers to allow us to compete for their trade. Superiority acknowledged wherever used, sold or exhibited.

Še

P. O. Box 1042.

HARDWARE

MANUFACTURERS' AGENTS, as follows:

Wheeling Hinge Co.,
Howard Bros. & Co.,
Cotton, Wool and Curry Carda
Thompson, Derby & Co.,
Scythe Snaths.
Ottego Forks, Rakes, Hoes, &c.
He Broks, Rakes, Hoes, &c.
He Broks, Rakes, Hoes, &c.
He Kipp, Nail Hammers.
Hon Oity Tool W'hs Ld, Vises,
Picks, Mattocks, Grub Hoes, &c.
Jacobus & Nimick Mfg. Co.,
Jacobus & Nimick Mfg. Co.,
Locks, &c.
Bandusky Tool Co.,
Pipmouth Tack & Rivet Works.
Jacobus & Nimick Mfg. Co.,
Jacobus & Nimick Mfg. Co.,
Miscellaneous Hardware & Carry, Crawley & Derlin,
Miscellaneous Hardware & Cart Code Hills and Groces Code Missellaneous Hardware & Care Code Missellaneous Hardware & Care Code Missellaneous Hardware & Care Code Mills and Measuring Faucets, &c.

Miscellaneous Hardware & Cart Code Mills and Measuring Faucets, &c.

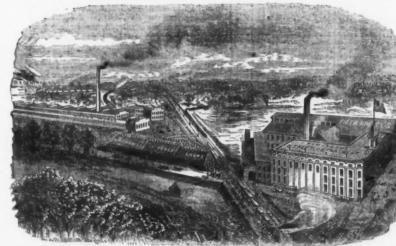
Miscellaneous Hardware & Cart Code Mills and Measuring Faucets, &c.

Miscellaneous Hardware & Cart Code Mills and Measuring Faucets, &c.

Mallinson,
Cast Steel Shears and Scissors.

Ketchem's Pat. Metallic Sieves.

CARRIAGE HARDWARE



Our new Illustrated Catalogue of 140 pages, and over 300 illustrations, will be mailed on application

THE E. D. CLAPP MFG. CO., Auburn, N. Y.



ASA FARR.

64 College Place,

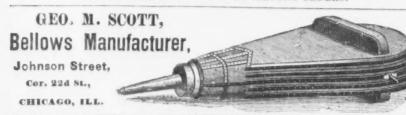
corner of Chambers Mreet, New York.

SANDS' TRIPLE MOTION WHITE MOUNTAIN ICE CREAM FREEZERS.

SANUS' I KIPLE MUITUN WHITE MUUNTAIN IGE UNEAR I RELECTOR.

THE WHITE MOUNTAIN FREEZER COMPANY are headquarters for Ice Cream Freezers and Ice ushers, being the only firm in the United States who manufacture all parts of the raw material. The mended the bands' Triple Motion issens of the United States have recombining Committee, consisting of 50,000 issens of the United States have recombined the Annals' Triple Motion White Mountain Freezer to all persons: We have used them; they freeze quicker than any other; they save time, and a fail and ice; the triple motion makes smooth cream without bunches; makes smooth cream without bunches; makes smooth cream without bunches; makes

HAND OR POWER White Mountain Freezer Co., 875.00 and 8175.00. Nashua, N. H., U. S. A. SPECIAL ATTENTION GIVEN TO EXPORT ORDERS.



New York Salesroom, 116 Chambers Street. AMERICAN TACK CO., Fairhaven, Mass.

Bandsaw Files, Boot Heel, Brass, Cabinet, Cant, Cotter Taper, Cotter Equaling, Cross or Crossing, Doctor,

Drill, Feather Edge, Finishing, Flat

Flat Equaling, Flat Wood, Gang-Edger, Ginsaw, Gulleting, Half-Round. Half-Round Wood,

Hand, Hand Equaling, Handsaw Blunt, Handsaw (Double-Ender), Handsaw Taper, single cut, Handsaw Taper, double cut, Handsaw Taper, slim,

High Back, Hook-Tooth, Knife, Knife Blunt, Lead Float, Lightning, Machine Mill, Mill.

Mill Blunt, Mill Pointing, Pillar, Pitsaw, Reaper,

Roller, Round, Round Blunt, Slotting, Slim Handsaw Taper, Square,

Square Blunt, Square Equaling Files, Stave Saw, Three-Square Files, Three-Square Blunt Files,

Tumbler Files, Union Cut, Warding Files, Warding Blunt File, Warding Round Edge File.

RASPS.

Baker's, Beveled Edge, Bread, Cabinet, File, Flat and Half Round, Flat Shoe, Flat Wood,

Half-Round Shoe, Half-Round Wood, Horse, Plain and Tanged, Horse Mouth,

Jig, Oval or French Shoe, Racer, Plain and Tanged.

SPECIALTIES.

Butchers' Steels, Improved, Bent Rifflers, Handled, File Cards, File Brushes, Machinists' Scrapers, Stub Files & Holder, Detach, Surface File Holder,

Vise File Holder.

NICHOLSON FILE CO.. PROVIDENCE,

R. I., SOLE MANUFACTURERS.

Black Diamond File Works.



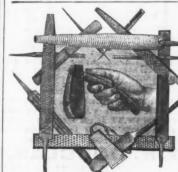


Awarded by Jurors of Centennial Exposition, 1876, for "VERY SUPERIOR GOODS."

H. BARNETT.

39, 41 & 43 Richmond St., Philadelphia.

CHARLES B. PAUL. Manufacturer of HAND CUT FILES.



BALTIMORE, MD., Manufacturers of

Made from the Best Refined Cast Steel. With all the requisite facilities to produce a first-class article, we are enabled to offer Files that will give entire satisfaction.

MORITZ & KEIDEL, Agents, 48 & 50 German St., Baltimore, Md.

ESTABLISHED 1842.

INCORPORATED 1881.

CRIPPS, President.

THE J. BARTON SMITH CO.,

J. B. SMITH'S FILES, RASPS, WOOD SAWS, &c., 211, 215 & 217 New Street, PHILADELPHIA.

New York Branch, 128 Chambers Street. WM. H. BRAMHALL, Manager.

DODGE & BLAKE. DODGE'S PATENT

These machines have long been in use in this country and in Europe, and are unexcelled for perfec on of work and labor saving. We now offer them with the latest improvements, and will apply them to forging and grinding other articles of tapering or otherwise irregular form.

Works at Woodside, NEWARK, N. J.

THRIFT FILE WORKS, Files,



No. 1 Commercial Street, Newark, N. J.

Grant Fan Mill & Cradle Co.

Grant's Grain, Coffee, Rice, Cochineal and Pimento Fans,



and
TURKEY WING GRAIN CRADLES,
4,5 and 6 fingers.
GRAPE VINE GRAIN CRADLES.
4 fingers.
SOUTHERN PATTERN GRAIN
CRADLES,
4,5 and 6 fingers.
All of a superior quality.
None gonuine unless marked
Grant Fan Mill and Cradle Co.



LANE BROS., Millbrook, N. Y.

our agents, Graham & Haines, 113 Chambers St., New York, a full line of our goods, and will be pleased to serve you at fac-



M. KING do WATERFORD, N. Y., Manufacturers of the BUTTONS PATENT

CUTTER AND PLIER

Specially Adapted for Use on Wire Fence.

Also Manufacturers of Blacksmith and Machinists' Stocks and Dies, Piug and Taper Taps,
Hand, Nut and Screw Taps, Pipe Taps and Reamers.
Price List on application.
Established by Daniel B. King, 1829.

A. FIELD & SONS,

TAUNTON, MASS.,

MANUFACTURERS OF

AMERICAN AND FRENCH

WIRE NAILS

TACKS, SHOE NAILS,

And Every Variety of Small Nails.

Offices & Factories at Taunton, Mass.

Warehouse at 78 Chambers St., New York,

where may be found a full assortment of Tacks, Brads, Wire Nails, &c., for the accommodation of the New York Wholesale and Jobbing Trade.

Any variations from the regular size or shape of the above-named goods made from sample to order. All

A SILVER MEDAL has been awarded above goods at the Paris Exposition, being the only med: awarded any American manufacturer of Tacks and Wire Nails.

DUC'S PREMIUM ELEVATOR BUCKET.



ALWAYS FIRST COMPETITIVE



The Storehouse Bucket, in sizes from 12 to 17 inches.

TESTS.



PREMIUM IN

This Bucket is struck out from the best charcoal iron; consequently is very durable. It requires so per cent less power to run it than the old-fashioned square bucket, and will outwear haif a dezen of them. Over 300,000 are now in use by the principal Millers, Brewers, Multisters and Manufacturers at home and abroad. It is the best Bucket mane. CAUTION.—The popularity of the DUC BUCKET has caused many manufacturers of the old style of Elevator Bucket to closely imitate its spherical shape. We warm all parties against patronising infringers of our patents, as they will be held accountable. Send for circular. Address The Mill Bucket, in sizes from 3% to 16 inches. T. F. ROWLAND, Sole Manufacturer, Continental Works, BROOKLYN. N. Y. TTTTTTTTTTTTT

OLD COLONY RIVET CO., Kingston, Mass.

Manufacturers of NORWAY IRON RIVETS of Superior quality.

We carry a large stock of the various sizes of *Tinners'*, *Carriage*, *Wagon*, *Hame*, *Belt*, *Barrel*, *Safe* and *Tank Rivets*, and make promptly to order all sizes not larger than 7-16 inch diameter. We have a capacity of two tons of the various sizes of small Rivets per day of ten hours. Freight allowed to all points on or east of the Mississippi River. Correspondence with buyers solicited.

WILLIAM H. DUNBAR, President.

HENRY HOBART, Treasurer.

JAMES L. HALL, General Agent and Manager.
te stock in the city with our New York agents, The American Tack Co., 116 Chambers St.

Eureka Self-Adjusting SCALES.



Have a patented attachment for ascertaining the ture of a dish or other receptacie used in weighing without the use of weights or less of time.

Manufactured only by John Chatillon & Sons 91 and 93 CLIFF ST., N. Y.

<u>csterbrook'</u>s BY ALL STATIONERS.

ESTERBROOK STEEL PEN CO. Works, Camden, N J. 26 John St., New York.

THE ANSONIA CORRUGATED STOVE PLATFORM



Send for List and Discount.

PURE ELECTRIC

ANSONIA BRASS AND COPPER COMPANY,

For Magnets, Telegraphs, Telephones, &c. Insulated on the bare wire with H. Splitdorf's patented Liquid Insulation, covered with exten or silk All sizes of Bare and Covered Wire in Stock. The conductivity of every bundle tested and warranted.

THE ANSONIA WROUGHT GONGS, For Clocks, Indicators, Telephones, Call Bells, Bell Punches, Steamboat and Bailroad Use. Burnished or Nickel Plated.

ANSONIA BRASS AND COPPER CO., 19 Cliff St., New York.

HORSE NAILS.

Hot Forged, Warranted Best Quality, Pointed and Polished.

HOWE & CO., Trov N. Y, Sole Agents.

despite the more extensive use of Spelter for galvanizing purposes in Europe. Business being, at the same time, of a dragging character at New York in the metal, the price home industry. Poland now produces begalvanizing purposes in Europe. Business being, at the same time, of a dragging character at New York in the metal, the price gradually receded during the month from 51/4 to 51/4. March brought no relief, the market on both sides of the Atlantic remaining inanimate, prices keeping here between 5¢ and 5¼¢. In April news reached us from the West that production there had dimin-ished somewhat, but although there was a shed somewhat, but although there was a slightly reviving demand with us early in the month, dullness prevailed later on and the price declined from 5 1/4 to 4 1/4 Europe became equally flat. In May the disappointment engendered by the poor spring season paralyzed the market among us completely, and with the little doing the metal gave way another 1/4 clean the form of the spring state of the another 1/4¢, closing at 43/4¢ @ 5¢. Europe did not show any symptoms of recovery. Production in Germany was shown to have

to have been 100,000 tons in 1880, against 97,000 tons in 1870. The import of Calamine from Spain into England had been 32,491 tons in 1880, against 27,613 in 1879. In the London market Spelter had stood £15. 15/ on April 1; on May 1 it was worth £15. 7/6, against May 1, 1880. £10. 15/: 1870. £14. 15/: 1878. market Spelter had stood £15. 15/ on April I; on May I it was worth £15. 7/6, against May I, 1880, £19. 15/; 1879, £14. 15/; 1878, £18; 1877, £20. 5/; and 1876, £24. No revival in the demand occurred in June; values were consequently sustained with difficulty at 4%¢@5¢. Europe meanwhile continued quiet, without giving way any further. In July a better feeling at length prevailed on both sides of the Atlantic. It was acknowledged that the use of galvaeined goods had assumed unlooked-for proportions, and there was even some talk there of the renewal of the syndicate to cause a rise. The demand at the same time reviving slightly in this market, holders were able to raise the price to 5¢@5½¢. Parties interested in Spelter market, nonders were able to raise the price to 5¢ @ 5½¢. Parties interested in Spelter were, nevertheless, again doomed to disappointment for the time being, in spite of the moderate production in this country and a slight revival in the demand in the West for a slight revival in the demand in the West for rolling purposes. Spelter kept at New York in August at 51-16¢ for Domestic, and 5¾¢ @ 5¾¢ for Silesian. In London the demand for India became a little brisker. In September more activity developed in Europe, Lon lon advancing to £15. 15/@ £16, but in this market the listless state of affairs found to relief the price ranging at the time. this market the listless state of affairs found to relief, the price ranging at the time between 5146 and 5146, for Domestic; and 5146 @ 5146, for Silesian. The import of Spelter into the United States during the first seven months had been 1,175,946 B, against 5,743,343 in 1880, and the export 292,000, against 735,669; the import of Sheet Zinc, simultaneously, had been 1,375,497 B, against 3,239,369, and the re-export, 16,586, igainst 38,367. At length the turning point was destined to come in the metal on both sides of the ocean, October inaugurating a notably improved demand. The same obsernotably improved demand. The same observations made in Europe with respect to the increased galvanizing demand were confirmed among us, and coinciding with greater activity in the rolled article, the metal attracted more attention. Con-

the metal attracted more attention. Consumers preferred to lay in a supply in time, and without the assistance of a syndicate. Spelter manifested a decidedly upward tendency in Europe likewise. Stocks there had run low, while the approach of the winter season held in prospect but a scanty supply from the Silesian mountain districts thenceforward. It thus occurred that amid greater activity, the price advanced at New York forward. It thus occurred that amid greater activity the price advanced at New York from 55% to 5% t. The improved feeling thus inaugurated made further headway during the month of November, the price here rising to 5% t, and a greater volume of dealing being prevented here only by the restricted supply. London advanced from £16. 12/6 to £17, 12/6. During the first eight months

supply. London advanced from £16. 12/6 to £17. 12/6. During the first eight months the import of Spelter into the United States had been 1,207,199 lb, against 25,854,173 in 1880; the net import of Sheet Zinc, 1,442,-141 lb, against 3,317,799, and the export, 795,413, against 1,479,452. Sheet Zinc had during the year gradually risen from 7¢ to 8¢ in November. December remained steady at 5½¢ @ 6¢ with Common Domestic and Silesian, and Sheet Zinc at one moment brought as much as 8½¢, but receded with

and 9402 from Belgium. Besides this, 16,677 tons of manufactures were received, Ger-many contributing 3797; Holland, in transit, many contributing 3797; Holland, in transit, 6578, and Belgium, 5907. The export of Spelter and manufactures was 12,237 tons, of which British India took 7640 tons. Estimating the yield of slab metal from foreign imported Ore at the same figure as the domestic British, we find a production of 11,225 tons of metallic Zinc, and adding the import of Spelter and its manufactures, we find the total obtained from abroad to have been Packed 12 in each case

62,203 tons, of which 12,237 tons were reexported. The import of Speller into France, in millions of france, has been as follows for the years named, the first column showing the whole year and the second the first seven

the total obtained from abroad to have been

months : 14 5 1873 17% 5% 1873

This shows great steadiness. The export of Calamine from Spain has been:

Value in Value in Value in Value in Tons. francs. Tons. francs. Tons. francs. 32,491 1,786,995 27,613 1,507,781 33.532 2,011,954

This movement also exhibits considerable steadiness. The Silesian output of metallic Zinc has of late years increased at the rate of about 10 % annually, say some 10,000 tons a year, which cannot be called a very rapid increase; but that portion of Persei rapid increase; but that portion of Prussia was in the habit of largely exporting Sheet Zinc to Russ a, which export has been interered with since the latter country raised the

but under protection this output may soon be doubled.

LOWEST AND HIGHEST PRICE OF COMMON SPELTER.-

| 1378. | 1870. | 1880. | 1881. |
|-------------------|--------------|------------|------------|
| Jan 5% 6 6 | 436 @ 436 | 6% @ 6% | 5% @ 5% |
| Feb 5% @ 5% | 458 @ 5 | 614 @ 61/8 | 5% @ 3% |
| March 534 @ 514 | 41/2 @ 43/4 | 6% 60 7 | 5 9 5% |
| April 51/8 @ 55/8 | 478 @ 474 | 6 @ 634 | 479 @ 5% |
| May 414 @ 5/8 | 459 @ 424 | 6 @ 6% | 4/4 @ 5/4 |
| June 41/2 @ 5 | 438 @ 458 | 576 @ 5% | 474 6 574 |
| July 4.55 @ 5 | 472 @ 4/8 | 5 @ 5% | 4 76 @ 516 |
| Aug 414 @ 5% | 5 @ 5% | 5/4 @ 5/4 | 5 @ 55% |
| Sep 4% @ 5 | 5 1/4 @ 61/8 | 5% @ 5% | 5 @ 5% |
| Oct 414 @ 51/4 | 6 @ 61% | 5 0 518 | 5% @ 5% |
| Nov 414 @ 5 | 6% @ 6% | 474 @ 5 | 5% @ 5% |
| Dec 434 @ 454 | 6 @ 61% | 436 @ 436 | 574 @ 6 |

January opened with a reduced stock, while consumption gave signs of an early revival; holders, therefore, showed great firmness, in expectation of a good spring campaign. In England an equally firm feeling was noticeable. Ordinary brands Charccel Bright stood at New York, \$5.87½ @ \$6.25; ditto Ternes, \$5.25 @ \$5.37½; Coke Tin, \$4.90 @ \$5; and ditto Ternes, \$4.90 @ \$5. In February, notwithstanding the severity of the winter, consumers operated with the utmost regularity, but the demand being more exclusively of a jobbing character, large lines moved off with comparatively less ease. In this manner a recoil of 25¢ per box occurred. Coke Tin closed at \$4.87½ @ \$5. The import of Tin Plates into the United States in 1880 had been 3,160,076 cwt., worth \$16,518,113, against 3,085,014 cwt., worth \$13,227,659, in 1879. The strikes in Wales in March sustained prices in Liverpool, New York meanwhile drawing upon the stock at the latter place, steadily decreasing. As this coincided with a more active demand among us, the article recovered during the month 25¢, Coke Tin being worth \$5 @ \$5.25. It was therefore expected that with a continued curtailed supply in Wales and light stocks here, the rise would make some further progress in April; but in this holders were dirappointed, the demand from the West being slacker than is usually the case during the spring. Our market thus kept quiet, without change in prices, Coke ranging between January opened with a reduced stock, slacker than is usually the case during the spring. Our market thus kept quiet, without change in prices, Coke ranging between \$5.12½ and \$5.25. This disappointment continuing into the month of May, Wales and Liverpool also felt the effect of it, causing the month to become a dull and sluggish one on both sides, everybody—the producer and the importer and dealer—complaining of momentary unprofitableness in the trade The supposition was that consumers held larger stocks than had been presumed. In this manner the price receded 25¢, Coke closing at \$4.85 @ \$4.95. In June people began to take a more roseate view of the investigate future. immediate future. The advices from Europe immediate future. The advices from Europe became more encouraging, and on this side the extremely low price stimulated the use of Plates. Although the general demand was steady and even progressive in point of volume, there was much irregularity in values, some species of Plates weakening and others looking up. Coke rose to \$5 @ \$5.10. Coke stood at Liverpool at 15/@ 15/6, while here, with a fair demand, prices kept steady, stocks at the same time being only moderate in size, and Coke closing the same as the in size, and Coke closing the same as the previous month—\$5 @ \$5.10. During the ensuing month (August) a fair jobbing trade was transacted, the demand running less on large lots, but the aggregate amount going into consumption being satisfactory, keeping stocks just within easy control, and leading to a slight appreciation in values. In Wales the output just about sufficed for the English and export demand. Some falling off in the and export demand. Some falling off in the use of Tin Plates for fruit canning was at this time apprehended, on account of the great drought and deficient crop. Liverpool cabled Coke Tin higher (16/6), stocks there and in Wales being much reduced. Coke Tin advanced in this city to \$5.10 @ \$5.15. The lessened consumption of Coke for fruit canning was at this juncture estimated at 150,000 boxes by some parties on this side. Others insisted that it had not diminished at all. September, at any rate, found our mar-Silesian, and Sheet Zinc at one moment brought as much as $8\frac{1}{2}$, but receded with some more supply from Europe to $8\frac{1}{2}$ ($8\frac{1}{2}$). Silesian, and Sheet Zinc at one moment brought as much as $8\frac{1}{2}$, but receded with some more supply from Europe to $8\frac{1}{2}$ ($8\frac{1}{2}$). Some parties on this side.

With Patented O. G. Border.

ROUND ZINC.

27, 30, 32, 34, 36 inch.**

Manufactured of heavy metal, requiring no nalling or lining, the edge retaining its form. Superior pattern, finish and quality. Price as low as sny.

Silesian, and Sheet Zinc at one moment brought as the inches of memory as $8\frac{1}{2}$, but receded with some more supply from Europe to $8\frac{1}{2}$ ($8\frac{1}{2}$). But it is a some more supply from Europe to $8\frac{1}{2}$ ($8\frac{1}{2}$). But it is a some more supply from Europe to $8\frac{1}{2}$ ($8\frac{1}{2}$). But it is a some more supply from Europe to $8\frac{1}{2}$ ($8\frac{1}{2}$). But it is a some more supply from Europe to $8\frac{1}{2}$ ($8\frac{1}{2}$). But it is a summary at the lessened consumption of Coke for Fruit canning was at this juncture estimated at 150,000 boxes by some parties on this side. Others insisted that it had not diminished at all. September, at any rate, found our market in an apathetic mood, as it was thought that production had got the better of consumption for the time being. Meanwhile, however, the raw material had begun to rise in such a striking manner that it became evident the article was bound soon to resume an upward tendency in conformity therewith. After first declining $25\frac{1}{2}$ the market recovered somewhat, closing at 85 ($8\frac{1}{2}$). To with Coke Tin, while in October Liverpool kept fluorating, with Coke Tin between 16/2 and 0402 from Belgium. Besides this, 16/6/7 the price at New York, with a fair fluctuating, with Coke Tin between 16/ fluctuating, with Coke Tin between 16/ and 16/6. The price at New York, with a fair amount of activity, gradually hardened, Coke closing at \$5.20 @ \$5.37½. During the month of November everything seemed to concur to impart a fresh impulse to the demand and to prices. Wales, in the face of the rapidly advancing raw material, fell into quite an excitement and took a decided upward turn the discovery heing made that ward turn, the discovery being made that stocks everywhere diminished fast, especially in Liverpool. Ocean steam freights were raised between the latter place and this side from 10/ to 15/, and even at this advance goods tarried in coming over, being detained in many instances by head winds and unusually rough weather. The takings by consumption, meanwhile, continued on this side on a fair scale, and Coke Tin improved to \$5.37½ @ \$5.50. In December, Coke Tin advanced in the New York market to \$5.87½, there being no accumulation of stocks of advanced in the New York market to \$5.87\frac{1}{2}, there being no accumulation of stocks of Plates, and the foreign markets, at first excited, still remaining strong to the close of the month. Liverpool at the time cabled Coke Tin 18/, and Charcoal 20/@22/. The net import of Tin Plates into the United States during the first 9 months of 1880 was 2,750,850 cwts., against 2,423,811 in 1879. 2,73,030 twee, against 2,323,011 in 1879. The average price at Liverpool was, for Coke Tin, 22/8 2 box in 1875, 19 6 in 1876, 17/8 in 1877, 15/1 in 1878, 19/5 in 1879, and 18/8 in 1880, the average of the ten years ended December 31, 1880, being 23/.

| Year. | | Year. | Tons. |
|-------|---------|-------|--------|
| Id91 | 219,606 | 1876 | 132.56 |
| 1873 | 118,083 | 1877 | 153,22 |
| 1873 | 120,638 | 1878 | 155,24 |
| 1874 | 122,960 | 1879 | 197.84 |
| 1875 | 138,363 | r880 | 217,69 |

COMP

Britain, Conn., U. S. A.

Manufacturers of BUILDERS' AND OTHER HARDWARE,

IRON AND BRASS WOOD AND MACHINE SCREWS.

MANUFACTURERS' ACENTS AND DEALERS IN CENERAL HARDWARE AT OUR

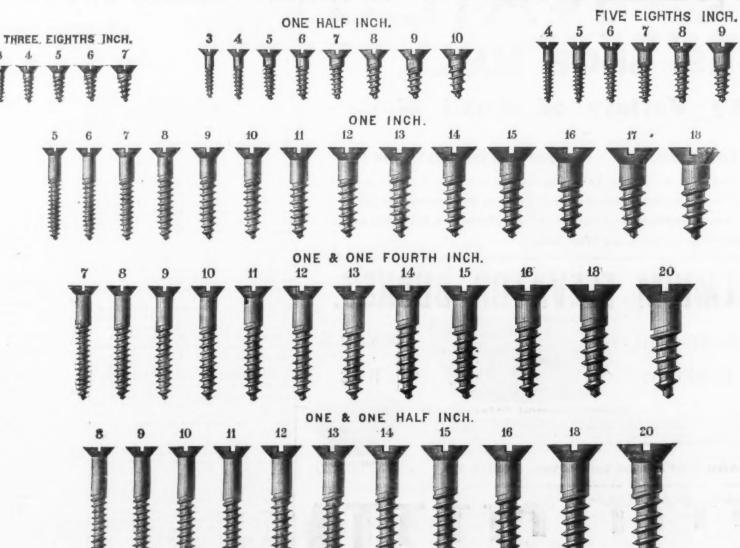
WAREHOUSES: NEW YORK, 45 & 47 Chambers St.; PHILADELPHIA, 425 Market St.; BALTIMORE, 17 South Charles St.; LONDON, 47 Upper Thames St.

IRON AND BRASS WOOD SCREWS.

P

LOCK

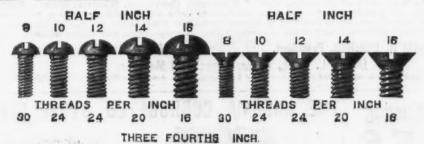
S



IRON & BRASS MÁCHINE SCREWS. STANDARD THREAD.

QR. INCH THREE EIGHTHS INCH. THREE EIGHTHS INCH. PER INCH THREADS THOS PRIN THREADS PER INCH. 32 80 24 24 32 30

THREE FOURTHS INCH.

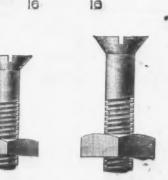


= THREADS PER INCH. 24 20 30 16 INCH DNE 100 **KNOBS** THREADS PEB : INCH . 19

THREADS PER INCH, 20 10 INCH 10 12 14 16 18 20 24 24 20 THREADS INCH



20



M. L. B. & CO.

B. &. A.

Continue with a fuller stock than ever before the business which has been conducted without interruption for eighty-one years, as

IMPORTERS, MANUFACTURERS' AGENTS, AND WHOLESALE DEALERS IN American, English, German, French and Swedish

CUTLERY.

selling agents for the United States for ENGSTROM'S SWEDISH RAZORS. selling agents for the United States for Starr Man't'g Co.'s ACME SKATES. selling agents for WINSLOW'S POPULAR SKATES, Wood Tops, Clubs, All Clamps and Ladies' Skates, Popular Roller Skates, Park Roller, Improved Circular Running Vineyard Politers.

Rollers.
Sole selling agents for **HOBERT MURPHY'S** Corkscrews, Oyster Knives, Shoe Knives, Rubber Knives, Butter and Cheese Tryers and Steel Implements.
Sole selling agents for **D. HOBERTS'** Nickel-plated and Japanned Handle Shears and Scissors.
Sole selling agents for New England, for **H. HEINISCH'S SONS'** American Shears, Scissors and Trioners.

Sole selling agents for New England, for it. HEINISCH'S SONS' American Shears, Scissors and Trimmers.

Sole selling agents for New England, for it. HEINISCH'S SONS' American Shears, Scissors and Trimmers.

Sole selling agents for New England, for the STAR SCISSORS COMPANY'S Nickel-plated Ladies' Scissors, Trimmers, &c.

JOHN BUSSEL CULLERY CO.'S Table Cutlery, Pocket Knives, Butchers', Painters', Druggists' and Household Cutlery, Silver-plated Forks and Spoons.

JOSEPH BODGERS & SON'S Table Cutlery, Pocket Knives, Scissors, Razors, Erasers.

GEORGE WOSTENHOLM & SON'S Celebrated IXL Pocket Knives, Razors, Farriers' Knives.

JONATHAN CROOKES? Pocket Knives.

WADE & HUTCHER'S Celebrated Razors.

FREDERICK HEYNOLD'S RAZORS

THOMAS R. CADMAN'S BENGALL Razors and Razor Blanks.

NEEDHAM BROTHERS' Repeat' Pocket Knives.

Sole selling agents for NEW ENGLAND KNIF'R CO.'S Pocket Knives.

Sole selling agents for BARCLAY & BROS, Pocket Knives, Scissors.

Sole selling agents for BARCLAY & BROS, Pocket Knives,

Sole selling agents for BARCLAY & BROS, Pocket Knives,

Sole selling agents for BARGER'S RAZOR NTRAPS.

Sole selling agents for BADGER'S RAZOR NTRAPS.

Sole selling agents for UNITED STATES FISH HOOK WORKS.

Sole selling agents for TADGER'S RAZOR NTRAPS.

Sole selling agents for The FISHING LINES bearing the Trade Mark, "Best Quality Hand Laid Lines and Silk Lines," which received Centennial Medal for "strength and care taken in manufacture."

Sole selling agents for the Patent Adjustable Floats and Sinkers.

Importers of Calcutta and Japan Hamboo Poles, Fish Hooks, Swivels, Silver Fishing Gimp, Spanish Silk Worm Gut.

Selling agents for the Best Manufacturers of Jointed Fishing Hods, Braided Fishing Lines, Fishing Receis, Artificial Baits, Patent Pocket Flasks, Hammocks.

COMPRISED IN ABOVE ARE

More than 1130 Different Patterns of POCKET KNIVES. More than 500 Styles and Sizes of SCISSORS AND SHEARS,

More than 150 Patterns of RAZORS. More than 750 Kinds of TABLE CUTLERY.

And all other articles of CUTLERY in great multitude.

And over 445 Kinds and Sizes of FISHING LINES. 55 Patterns (over 950 Different Kinds and Sizes) of FISH HOOKS.

155 Styles of Fishing Rods. 120 Patterns Fishing Reels. 350 Varieties of Artificial Bait.

Lists of Murphy's Steel Goods, catalogues of our Skates, catalogues of our Fishing Tackle Stock will be mailed on application to dealers in these lines of goods. See Copartnership Notice on Page 22.

BRADFORD & ANTHONY, Boston, Mass.

RICHARD DUDGEON. No. 24 Columbia Street, New York. Maker and Patentee of the improved

Hydraulic Jacks Punches.

Roller Tube Expanders and Direct Acting Steam Hammers. Communications by letter will receive prompt attention, Jacks for pressing on Car Wheels or Crank Pins made to order



cleveland of fromore souched. Every Hardware Dealer should have of CLEVELAND WEOUGHT IMON FENCE WORKS.
Office. 21 Water street, near Union Depot, CLEVELAND, OHIO,

BRASS FOUNDERS of the SOUTH.

We have formed an agency for the sale of our goods in lichmond, Ya., where they can be furnished at factory prices, saving time and freight. Every crueible shipped by-us fully guaranteed. Please remember that the quality of our goods is not equaled by any other maker. Send your orders to

ASA SNYDER, 1008 Carey Street, RICHMOND VA.



German Silver, Brass and Black Lead Stoppers

and Nozzies. Jewelers' Crucibles, Covers, Dips, &c. FILE HARDENERS. All our goods are made of the firest Ceylon Plumbago.

W. T. MACFARLANE, Treasurer and Agent.

THE CINCINNATI BARBED WIRE FENCE CO.,



FOUR-POINTED BARBED WIRE FENCING. We have large stock of Galvanize1, Red and Brown Painted Earbed Wire on hand, and can fill all orders promptly. Send for sample and prices.

RHODE ISLAND HORSE SHOE CO.,

Horse, Mule & Snow Shoes of the Perkins Pattern.

Works at Valley Falls, R. I. Office, 31 Exchange Place, Providence, R. I. C. H. PERKINS, Gen'l Manager.

B. & A. brands) at New York on the 1st of each of Cliff and Beekman streets. month, 1879 and 1880.

| | x8 | 79- | |
|----------|--------|-----------|--------|
| January | \$5.33 | July | \$5.50 |
| February | 5.70 | August | 5.40 |
| March | 5.75 | September | 5.57 |
| April | 5.67 | October | 6,66 |
| May | 5.66 | November | 7.28 |
| June | 5-43 | December | 7.81 |
| × | 38 | 80. | |
| January | \$6.11 | July | \$5.40 |
| February | 8.73 | August | 5.70 |
| March | 8.68 | September | 5.78 |
| April | 8.00 | October | 5.46 |
| May | 6.75 | November | 5.40 |
| | | December | |

PREVIOUS PRICES.

| July 1, 1874 | | February 28, 1878 | |
|--------------------|------|--------------------|------|
| April 28, 1876 | | March 31, 1878 | 5.66 |
| May 5, 1877 | | April 30, 1878 | 5.74 |
| September 7, 1877. | | May 31, 1878 | 5-37 |
| October 19, 1877 | 5.97 | June 15, 1878 | 5.35 |
| December 20, 1877. | 5 85 | July 15, 1878 | 5 33 |
| December 31, 1877. | 5.77 | October 3, 1878 | 5.18 |
| January 1, 1878 | 5 75 | December 18, 1878. | 5.28 |

INDUSTRIAL ITEMS.

MAINE.

The Katahdin Furnace is in blast and mak ing 120 tons per week. The product is sold ahead. The Bangor and Katahdin Iron Works Railway, 20 miles long, to establish rail communication with the furnace, is fast

approaching completion.

The Atlantic Horse Nail Company has been organized at Portland for the purpose of manufacturing and selling horse nails; capital, \$100,000.

The Woonsocket Machine Company have just started a new 100-horse power Harrisjust started a new 100-horse power HarrisCorliss engine, with boiler set in the new
Hawkins setting. They have recently made
large additions to their foundry, erected a
new blacksmith shop, and added very many
new special tools, some of which were imported from England. About 300 men are
employed, one-third of the number being
engaged in the shafting department. The
company have averaged ten cotton looms per company have averaged ten cotton looms per day during the past season, and hope to exceed that number the coming spring. A new extension, devoted exclusively to shafting, is about to be built, which will give this company by far the largest amount of space and number of tools, devoted to shafting exclu-sively, of any similar concern east of Phila-delphia. A large number of trimmings and inspecting machines are being built, the comany controlling that specialty.

The Rhode Island Locomotive Works, at

Providence, have received orders for the construction of ten new extra-fast locomotives for the Grand Trunk Railway, in addition to the new first-class passenger coaches in course of construction for the same company.

CONNECTICUT.

The Bridgeport Brass Company expected to be in active occupation of their large extension about January 1. Business is booming and seems to promise well for the

Silver & Gay, machinists, of North Chelms-Silver & Gay, machinists, of North Chelms-ford, are busy on orders for quillers, reels, ballers and other machinery for which their works have long been known. Their new and improved balling machines for balling all kinds of material are having a large sale, and they find it difficult to keep up with their orders for them. A feature of their estab-lishment is the accompanions for deliver beauty lishment is the convenience for doing heavy machine work, few concerns being better

machine work, few concerns being better fitted for that purpose.

The new tack plate mill of the Old Colony Iron Company, at East Taunton, will be ready to run some time in January next. The mill is 180 feet long by 130 feet wide. It has an engine of 350 horse-power from the Corliss Works at Providence, and when completed will employ 75 men.

pleted will employ 75 men.

The Pheenix Machine Company, Lowell, has shipped this week the twisters, &c., to the Pioneer Mill, Memphis, Tenn. They now have nearly ready for shipment a large number of their patent expansion reed and comberned other patent expansion reed and comberned other patent associations.

ber of their patent expansion reed and comb and other patent specialties. Boston and New York parties will, it is reported, soon start the old Agawam Nail Works, situated in East Wareham. The bolt works of Shelton & Co., in Shel-

been formed under the State laws of New Jersey, and is known as the Atlantic and Pacific Electric Light Manufacturing Co. Its works and main office are at Front and Pearl streets, Camden. Among the improvements claimed by this company the following may be mentioned: In the dynamo-electric machine a new compound field magnet, adapted to give five times the effect of the magnet as The firm expect to employ about 20 men. used upon other machines. An armature adapted to be taken apart and repaired wherever it may be, and thereby dipensing with the necessity of sending it back to the works for repair; also an electric current governor, a device arranged to form part of the dynamo-electric machine, and to automati cally regulate the electricity taken off the machine, to the end that the internal and external electrical resistances shall be equal, thereby making it impossible to injure the dynamo machine should 49 lights be sudden ly turned out upon a circuit of 50. They claim other improvements and are working

of Cliff and Beekman streets. Williamson & Cassedy, 24 S. 4th street, Philadelphia, have been appointed sole agents for the Page Belting Co., Concord, N. H. The numerous friends of the old-established firm of Knight & Smith, Philadelphia, will regret to hear of the sudden decease of Mr. Caleb H. Smith. Mr. Smith went down to their place of business on Monday, and was taken with an apopleptic fit and died before he could be carried home. He was fifty-five years of age and much respected.

A very disastrous fire took place in Philadelphia during the closing hours of the old was a taken with an alpha to the closing hours of the old delphia during the closing hours of the old was a taken with an applicant, the company being enjoined not to lease or rent the property until after the stockholders' meeting in Jan-Williamson &

A very disastrous fire took piace in Fina-delphia during the closing hours of the old year. The five-story building at Fourth and Race streets, which was put up about two years ago, suffered damage to the extent of about \$150,000. Cox & Sons, engine builders and manufacturers of plumbers' fittings, and the Keystone Portable Forge Co. occupied one of the lower stores, and suffered some loss. Their business will not be interrupted, however, as both firms have their patterns at the works at Bridgeton, N. J. They inform us that all orders can be filled with the usual promptness.

The year just closed has been a busy one at the Baldwin Locomotive Works. The whole number of locomotives built dur-ing the year 1881 was 555, or at the rate of two every working day. Of this number 88 were built for export to foreign countries as follows: To Australia 15, Brazil 16, Mexico 48, Cuba 4, Central America 2, Peru 1, Sandwich Islands 1. In 1880, 517 locomotives were built, 53 of which were for foreign account. In 1879, 398 were built, 90 of which were for foreign account. It was in the autumn of 1878 that the present business activity began; from 1874 to 1878 the works were only partially employed. In 1873 the works were running at their then full capacity, and the product of that year was as fol-

owned by the Blair Iron and Coal Company, a strange accident is reported to have occurred last week. The gas escaped from the furnace in large quantities and pervaded the property to such an extent that all the employees, together with a number of residents near by, were asphyxiated by it, and had to be removed from the vicinity of the furnace. The escape was checked and the persons of At Bennington Furnace, near Gallitzen, owned by the Blair Iron and Coal Company, a strange accident is reported to have occur-red last week. The gas escaped from the The escape was checked and the persons affected have since recovered.

Messrs. Raney & Burger, furnacemen of New Castle, have purchased the coke ovens in that city. There are 80 ovens in all, and they will be started up immediately.

The Lehigh and Wilkesbarre Coal Company was last week taken out of the hands of the receivers, by order of Judge McKen-nan, in the United States Circuit Court. The injunction against it, granted on petition of its creditors when it became insolvent, was discolved, and it is once more on its feet a solvent corporation. The petition for this decree was presented in April, 1880, showing that the company was able to satisfactorily take care of the interests of its creditors without the control of the Court. The receivers filed an answer at the same time and the matter was referred to Joseph A. Gray as master, who reported that the petition should be granted. The Court did not make the transfer at the time, but a supplemental petition was presented and the order made as stated.

as stated.

Fifty-eight new coke ovens were fired up at the works of the Chicago and Connellsville Coke Company, in the Connellsville region, last week. They are now shipping 20 cars

per day.

At Miller, Printz & Co.'s Iron Works, Reading, drilling lathes are being built for Jacobus & Nimick, Pittsburgh; hat machinery for Fitchorn, Redeay & Co.'s hat factory, Adamstown, and several 30-horse-power horizontal engines. They are also doing a great deal of repair work.

The Parker Glass Co., Farker City, Armstrong County, are doing a big business. They have now very fine facilities for shipping goods, a point in which they were weak at first, and which incommoded them a good deal. In some respects their shipping conveniences are now superior to those of many

The bolt works of Shelton & Co., in Shelton, have been burned; loss \$30,000; insured.

NEW JERSEY.

But one of the spiegel furnaces of the Now Jersey Zinc and Iron Company is at present in blast. Another will be blown in this in blast. Another will be blown in this month. The stack now in blast is making for tons per week.

A new electric light company has recently

Messrs, Loose, Seaman & Co., who have

Pa-burg, and named them the Hamburg Plow Works, are making extensive repairs and preparations to start on January 10, 1882. They are building a new pattern shop and engine house. The pattern shop will be fire-proof. A 20-horse engine will at once be erected by Orr, Painter & Co., of Reading.

The erection of the Penn Hardware Company's new building, in Reading, will be commenced as soon as possible after the first of January. Over 200,000 bricks have been already delivered. The new building will have a front of over 200 feet, will contain four foundries, and give employment to some foo hands when in full operation.

Orders for files are received from places as far distant as Denver, Col., and Galveston, Tex.

The Isabella Furnace will be put in blast again very shortly.

PITTSBURGH AND VICINITY.

claim other improvements and are working under patents.

PENNSYLVANIA.

Business changes in the iron trade in Philadelphia are very few this year, and, so far as advised, are as follows: D. W. R. Read & Co., ores, &c.—Mr. T. Horace Brown retires; Mr. Read continues the business alone. Sites & Gill, metals—Mr. Thompson C. Gill admitted as partner. N. & G. Taylor Co., tin plates—Mr. Nothan A. Taylor, George W. B. Taylor, and Hollinshead W. Taylor admitted as partners. Merchant & Co., tin plates—Mr. Stephen and Western road recently purchased four acres of land known as Wainwright's Island, which has 2800 feet of river front. This will be used as a transfer station in connection with its which are now almost finished. The Birmingham Rolling Mill Co. are running their mill double turn with orders and Ohio and the Pittsburgh and Western roads, and the trains will be made up here. The river frontage will be very useful for the transfer of cars by barges, similar to the present plan of the Pittsburgh and Lake Erie. This is about the last available depot property in the city. The Pittsburgh and Western road recently purchased four acres of land near the Pittsburgh Locomotive Works for yard and depot purposes.

The Junction Railroad Company have purchased a large tract of land known as Wainwright's Island, which has 2800 feet of river front. This will be used as a transfer station in connection with its which are now almost finished. The Birmingham Rolling Mill Co. are running their mill double turn with orders and the Pittsburgh and Western roads, and the Pittsburgh and Lake Every department of the Norton Iron Works is in full blast and working smoothly. The Pittsburgh and Lake Erie. This is about the last available depot The Directory only turning out 3673 kegs of nails. The blast furnace is in good working order, making her daily average of over 50 tons of land near the Pittsburgh Locomotive doing her usual good work, putting out a

Thomas Coffin & Co., clay-pot manufactur

until after the stockholders' meeting in January. The Iron City Brid W

with business . They eir lower shops at Chartier, Pittsburgh and Lake

lower shops at Chartier, Pittsburgh and Lake Erie Railroad, about January I.

The Brushton Glass Pot Works of Rosenzie, Maloney & Co. are very busy. They have pots of all sizes and kinds, both flint and window, now ready for delivery. They have 32 hands employed steadily at the works and are running full time.

The rumor that the Crescent Steel Works had purchased a large tract of land to erect additions to their works is contradicted by

additions to their works is contradicted b the proprietors, Messrs. Miller, Metcalf & Parkin.

The old water works engines have been

compelled to start up, in order to keep the supply of water from getting low. The new works are being repaired as fast as possible.

The Royal Flint Glass Bottle Works con-

time to do a good business, and things are prospering with them. Their office and factory are at West Bridgewater, Beaver

County, Pa.

The work of rebuilding the Millvale Iron Works, destroyed by fire a few weeks ago, has been commenced, and is being pushed forward night and day. They have purchased a portion of the Main Centennial Building for this purpose.

WEST VIRGINIA

Mr. Joseph Woodward has been elected President of the La Belle Iron Works, of Wheeling, to succeed Mr. W. H. Woodward, who has resigned. It is understood that Mr. W. H. Woodward has completed arrange-

Stack No. 1 of the Joliet Steel Company is blowing at the rate of 780 gross tons per week. No. 2 will blow in ring next month.

Quinnimont furnace went out of blast, but expected to blow in again about January 1.

The annual meeting of the stockholders of the Chicago Steel Horseshoe Company was held recently. The following directors were clected to serve the ensuing year: Charles R. Barton, Thomas S. Chard, S. H. Etheridge, W. B. Ullmann and William R. Kerr. At a meeting of the new directors, held after the meeting of the stockholders, William R. Kerr was elected president and W. H. Ullmann, secretary and treasurer. It was voted unanimously by the stockholders to increase the capital from \$100,000 to \$150,000. The company's works, which are located at Pulman, are a recent addition to that thriving city, and the growth of the business has been such that the company has been such that the city, and the growth of the business has been such that the company has been unable for some time to keep up with its increasing orders. In addition to making steel horseshoes it has lately added "drop forging," a new enterprise in the West. In fact, there are but three other establishments in the country where the process is carried on.

Mr. Hervey W. Fowler (late of the firm of Fowler & Sellers) has purchased the site for a large rolling mill at Englewood, some two miles south of the Chicago city limits, where he will at once erect the necessary buildings. The mill will make a specialty of re-rolling old railroad iron, and manufacturing spikes, bolts and fish-bar plates. He expects to have the buildings erected and the machinery on the ground within 90 days, which will cost not less than \$30,000. When in operation the works will employ from 100 to 150 hands. The Western Indiana Railroad Company has already taken measures to lay tracks from their main line to the new rolling mill works. their main line to the new rolling mill works.

MISSOURI.

The Hoyt Metal Company, St. Louis, report trade excellent. They are having They are having some marked: mprovements made at their works, which will increase their capacity 50

The St. Louis Bolt and Iron Company are running their establishment day and night on orders for fish plates, bolts, spikes and The Helmbacher Forge and Rolling Com-

pany are about putting in new machinery for welding railroad coupling links. The works are giving employment to about 275 The Duggan-Parker Hardware Manufac

turing Company are working 45 men and have orders ahead for several months. They contemplate enlarging their works in the

The Globe Fire Works, of North St. Louis, employ 16 men, and re-cut and manufacture between 12,000 and 15,000 files yearly. A 25-horse-power engine has recently been put in. Orders for files are received from places

ALABAMA.

Sloss Furnace, now under construction, is nearing completion. This furnace will have a plant of 200 coke ovens in connection with it which are now almost finished.

The Birmingham Rolling Mill Co. are running their mill double turn with orders

D. SMITH & CO.

Plantsville, Conn.,

Manufacturers of the

BEST QUALITY CARRIAGE MAKERS' HARDWARE.

Manufacture the Largest Variety of Forged Carriage Irons of Best Material and Workmanship.

PRICES LOW FOR QUALITY OF WORK FURNISHED.

The Saranac Nails are hammered hot and the finishing and pointing are done cold. Quality is fully guaranteed. For sale by all leading iron and hardware houses. PLATTSBURG, N. Y. W. S. GUIBORD, Secretary. S. P. BOWEN, President and Treasurer.

ELY & WILLIAMS, Gen'l Agents for Eastern and Middle States, 1232 Market St., Philadelphia; 1782 Water St., New York. | SARANAC HORSE NAILS, 36 Oliver Street, Boston. S. H. & E. Y MOORE, Gen'l Agents for Western States, 163 and 165 Lake Street, Chicago, Ill. SAM'L G. B. COOK & CO., Agents for Southern States. Nos. 67 and 69 (old Nos. 5 and 7) German Street, Baltimore, Md.

HARTLEY & GRAHAM, 17 & 19 Maiden Lane, NEW YORK, "ROBIN HOOD"

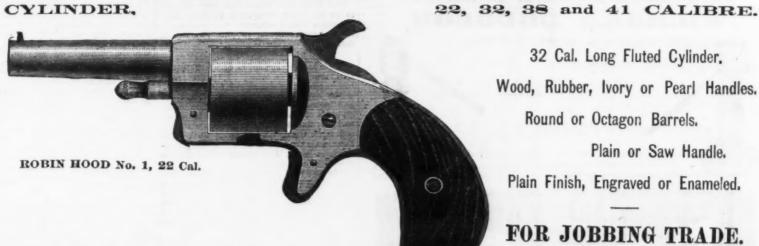
STEEL BARREL AND CYLINDER.

Cal., Short or Long Cylinder. Wood, Rubber Ivory and Pearl Handles.

Plain or Fluted Cylinders.

Round or Octagon Barrels. Plain Finish, Engraved or Enameled.

FOR JOBBING TRADE.



32 Cal. Long Fluted Cylinder. Wood, Rubber, Ivory or Pearl Handles. Round or Octagon Barrels. Plain or Saw Handle. Plain Finish, Engraved or Enameled.

FOR JOBBING TRADE.

COBB&DREW The Boss Lemon Squeezer.

Plymouth, Mass.,

Manufacturers of Copper, Brass and Iron Rivets; Common and Swedes Iron, Leathered, Carpet, Lace and dimp Tacks; Finishing, Hungarian, Trunk, Clout and Cigar Box Nalls, &c. Rivets made to NEW YORK AGENCY,

CRUNDY & DISOSWAY, Tinned (pure Tin). HARDWARE,

165 GREENWICH STREET. Agents for the Philadelphia Star Carriage and Tire Bolts



Manufacturers of Patent Scan HANDCUFFS AND LANTERNS.

All kinds Wagon & Carriage Axles

LAMBERTVILLE IRON WORKS.

MINERS' CANDLES.

Saperior to any other Light for Mining Purposes. Manufactured by

JAMES BOYD'S SON, Nos. 10 & 12 Franklin St., New York.



164 Fulton St.,

NEW YORK.

Acknowledged the Best. Patent Applied For.

ORDER EARLY. Torrey's Door Springs. S. ROEBUCK & CO. Manufacturers

HOG RINGER

Torrey's Patent COG WHEEL Ice Cream Freezers.

Torrey's Door Springs. FREEZE

S. ROEBUCK & CO., Manufacturers 164 Fulton St., New York.

HOC AND PIG

MINGER and RINGS

EAGLE BILL CORN HUSKER

CHAMBERS, BERING & QUINLAN, Exclusive Manufacturers, Decatur, Ill.

92 Church Street, New York,

LOTS OF HARDWARE & CUTLERY

No. 81 Murray St., NEW YORK,

Sole Agents in the United States for

JOHN BAYLISS' CELEBRATED HURRICANE BELLOWS, "LITTLE GIANT" PORTABLE FORGE and BELLOWS. HOT BLAST AND WATER TUYERE IRONS,

HORSE SHOERS' PINCERS and SHOEING HAMMERS. JOHN J. TOWER, 96 Chambers St., New York. TURNING HAMMERS AND SLEDGES, and CONTRACTORS' TOOLS.

RECORD'S SAP SPOUT GEORGE



RECORD'S PATENT

, RECORD MANUFACTURING CO. Conneaut Ohio.



SPENCER & UNDERHILL

94 Chambers St., New York, Agents for American Screw Co.'s Wood Machine and Rail Screws, Stove and Tire Bolts, Rivets, &c. G. F. Warner & Co.'s Carriage Clamps. DEPOT FOR

O. Ames & Son's Shovels, Spades and Scoops A. Field & Son's Tacks, Brads, Nails, &c. Nicholson File Co.'s Files and Rasps W. & S. Hutcher's Chisels, Gouges, Plane Irons and Cleavers. E. W. Gilmore & Co.'s Strap and T Hinges

Russell Jennings' Auger and Dowel Bits.
Also a general assortment of Hardware.

WYCKOFF

Manufacturer of



WOOD WATER PIPE

For Coal and Iron Mines.

Send for pamphlet.

A. WYCKOFF, Elmira, N. Y. R. COOK & SONS.

Carriage & Wagon AXLES,

WINSTED, CONN.

N. Y. MALLET and HANDLE WORKS

Calkers', Carpenters', Stone Cutters', Tin, Copper and Boiler Makers' MALLETS,

Hawsing Beetles, Hawsing and Calking Irons also all kinds of Handles, Sledge, Chisel and Ham mer Handles, Also COTTON AND BALE HOOKS.
Patented Feb. 13, 187; a new combination of Hooks
456 E. Houston St., New York City.





The Patent Combined Dinner Pail and Lantern.

The most perfect Dinner like world. Hot coffee nner and a Lantern at nigh Manufactured by JOS. HAIGHT,
PORT CHESTYR, N. Y.
Sent by express on receipt of
\$1.00. Agents wanted.

Keystone Screw Co. 17th and Venango Streets, PHILADELPHIA.

J. BILLERBECK. Manufacturer of Iron Gimlet-Pointed Wood Screws

W. & J. TIEBOUT. Manufacturers of

Brass, Galvanized & Ship Chandlery Hardware, No. 33 Chambers St., New York.

Vulcanized Rubber Fabrics

MECHANICAL PURPOSES.

RUBBER BELTING and PACKING.

Machine Belting. Steam Packing, Leading Hose, Suction Hose, Grain Elevator

Belting, Steam Hose, Piston Rod Packing,

Gaskets and Rings,

FNATH - 33LF IDTH .- 4 FEET

Machine Belting, Wringer Rolls, Billiard Cushlons. Grain Drill Tubes,

Vacuum Pump

Wagon Springs,

Ball Valves,

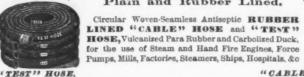
Car Springs,

Gas Tubing.

e DRIVING and ELEVATOR BELTS for the Buckingha lug perfectly for more than Twelve Years, also those for great elevators of the New York Central and Hudson in the World! We are now making an Elevator Belt welfa over 18,000 pounds.

LINEN and COTTON HOSE.

Plain and Rubber Lined.





Emery Wheels and Packing.

ORIGINAL Solid Vulcanite

EMERY WHEELS LARGE WHEELS MADE ON CAST-IRON CENTER IF DESIRED

PATENT ELASTIC Rubber Back Square Packing 8 BEST IN THE WORLD.

For Packing the Piston Rods & Valve Stems of Steam Engines & Pumps B represents that part of the packing which, when in use, is in contact with the Piston rod.

A the clastic back, which keeps the part B against the rod with sufficient pressure to be steam tight and yet creates but little friction.

This Packing is made in lengths of about 20 feet, and of all sizes from 1/4 to 2 inches square.

Corrugated Rubber Mats and Matting,

RUBBER MAT

For Halls, Flooring, Stone and Iron Stairways, &c. This practical and indispensable article—especially for wear where exposed to ice, snow or slush—was first introduced by this company several years ago, and its real value is in being almost indestructible, when proper materials are used in its manufacture, whilst the cheap, public by reckless imitators of our patent goods soon becomes brittle res



nferior quality forced on the pu

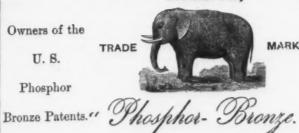
NEW YORK BELTING & PACKING CO.,

JOHN H. CHEEVER, Treasurer.

Owners of the U.S.

Phosphor

Plates,



Sole Manufacturers MARKS:

Phosphor Bronze in the United States.

- PHILADELPHIA, PA. 512 Arch Street,

THE STRONGEST, TOUGHEST, BEST AND MOST DURABLE METAL.

PHOSPHOR BRONZE SPRING WIRE AND WIRE FOR WEAVING, &c. Pump Rods, Tubes, Jack Chains, Screws, Rolled Bolts, Nails, Wire Cloth, Sash Cords, Sheets, Boat Nails, Pens, Wire Ropes,

Tacks, Sash Chains, Cast Kettles. INGOTS FOR CASTING. Send for Pamphlet and Price Lists

PHOSPHOR-BRONZE.

charcoal iron. Her present blast will close about the 25th of January. It is stated that this furnace will probably lie idle next seathis furnace will probably lie idle next season. Ore will be mined on the furnace lands and used in operating Hunnewell Furnace. Both are owned by the Eastern Kentucky Railway Company. Hunnewell Furnace will close her present blast during this or the coming week. The blast commenced on the roth of May last, and since that time the furnace has made 3870 tons of No. 1 charcoal iron, consuming in its manufacture 651,800 bushels of charcoal, and 11,610 tons of iron ore, which is an average of 140 bushels. of iron ore, which is an average of 140 bushels of charcoal and 3 tons of ore used for each ton of iron made. At the close of this blast the furnace will have on hand, for next eason's operations, 1300 loads of charcoal and 2500 tons of iron ore.

TENNESSEE.

The Roane Iron Works, of Chattanooga, have heavy orders on hand, and are working full capacity, night and day, to fill them.

The Lookout Rolling Mill, Chattanooga, is running double turn.

MICHIGAN.

The Iron Cliffs Company will bank up one of the Pioneer furnaces during the present week, to await an accumulation of coal, the continued open state of the winter rendering it impossible to keep up the supply. Thousands of cords of wood are cut, but cannot be moved to the kilns until there is settled cold weather.—Negaunee Herald.

We hear it authoritatively stated that it has been decided to take down the Grace Furnace at Marquette, the machinery having lately been disposed of.

The Youngstown Register says: By the 1st of January we shall have running in the very city itself one of the most promising very city itself one of the most promising coal banks that has been opened here for a long time. It is owned by the Witch-Hazel Mining Company, which is organized under the laws of Michigan, and of which Mr. Henry Wick is president, Mr. John M. Evans, treasurer, and Mr. C. B. Sill, secretary. A large proportion of the stock is owned by Mr. W. H. McCurdy, of Cleveland. The company has leased about 700 acres from Parmelee and Bissell, and coal has been found under all of it. At an early day the company under all of it. At an early day the company will be mining from 100 to 300 tons daily.

The new locomotive works of the Ohio Central are secured for Bucyrus.

Monitor Furnace will blow in again in a

few days.

Zanesville Furnace of the Ohio Iron Company went into blast on December 20. pany went into blast on December 20.

We are informed that Emma Furnace, at Cleveland, has been purchased by a number of gentlemen, among them J. H. Dalliba, of Cleveland; C. N. Schmick, of Leetonia, and Geo. D. Wick, of Youngstown. She will be put in blast by February I. She has been idle some time in the hands of creditors.

The Standard Coal and Jave Company.

The Standard Coal and Iron Company, with a capital of \$50,000,000, proposing to control a majority of the furnaces and mines in the Hocking Valley, will hold the first election in Boston next week and begin operations with the new year. We hear they have already purchased 8 furnaces and 25,000 acres of mineral lands, and secured options

on many other interests.

The John H. McGowan Pump Company, of The John H. McJowan Pump Company, of Cincinnati, write us that they have been exceedingly busy during the past year, that there has been a largely increased demand for their "Rival" steam pumps, and that for the coming year there is a large demand for their Letter "X" Rival, for portable and traction engine boilers, and that they have some large contracts on hand for their patent hydraulic presses and finishers for manufacrat. Brads, finishing Nails, Clout Nails, Trunk Nails, Hungarian Nails, Cigar-Box Nails, Basket Nails, 2d and 3d fine Nails, Carpet Tacks, Upholsterers' Tacks, Gimp and Lare Tacks, Brush BRASS AND IRON ESCUTCHEON PINS, &c., &c. MANUFACTURED BY

DUNBAR, HOBART & WHIDDEN, So. Abington Station, Mass. New York Salesroom, 39 Warren St. Goods made to order from sample. The Phosphor-Bronze Smelting Co., Limited,

The Phosphor-Bronze Smelting Co., Limited, The Phosphor-Bronze Smelting Co., The William Co., The Works of the Morris Sash Lock Company, of Cincinnati, having season.

The Works of the Morris Sash Lock Company, of Cincinnati, having season.

The Works of the Morris Sash Lock Company, at Hamilton, have made arrangements for starting the early on the manufacture of their Magic hoes and articles formerly manufactured at their works. Ample machinery and tools have been provided, and they expect a heavy trade in the coming season.

The Works of the Morris Sash Lock Company, of Cincinnati, having season.

The works of the Morris Sash Lock Company, of Cincinnati, having season.

The works of the Morris Sash Lock Company, of Cincinnati, having season.

The works of the Morris Sash Lock Company, of Cincinnati, having season.

The works of the Morris Sash Lock Company, of Cincinnati, having season.

The works of the Morris Sash Lock Company, of Cincinnati, having season.

ditional foundry and other buildings. They carry at the present time over 20,000 pounds of brass goods of their own make, to keep a full stock. They are getting out some new and beautiful designs of goods, which will appear

class machinery, and put into operation this year. This establishment has been for some time, owing to its connection with the old concern, doing only a limited amount of busi-ness, but Mr. A. Darusmont has assumed the management and control of the works, having purchased the entire interest of the old concern, and made arrangements for a vigorous prosecution of the work of stamping all kinds of metal goods, and will keep on hand a large and varied assortment of tin-ners and house-furnishing supplies. Their present office and salesroom are at No. 16 West Pearl street.

The Cincinnati Steam Forge Company have been making some new and important additions to their works recently, and are at this time very busy on some heavy orders. The

daily average of 13 tons of first quality of gas for heating operations in the laboratory charcoal iron. Her present blast will close have been made by Professor Wigner. The most costly material is spirit, which costs three times as much as petroleum or gas. Petroleum and gas cost nearly the same the for-

A recent issue of the Tradesman, in regard A recent issue of the Tradesman, in regard to the coal and iron deposits of Texas, says:

As Texas has never yet had a geological survey, the extent of her coal strata is not well defined. It is supposed, however, to embrace about thirty thousand square miles, in the northern and western portions of the State. Over this great area coal has been found at a great many places, but at no place has it been mined except to a very small expansion. has it been mined except to a very small extent. It is a bituminous coal, and almost, if not quite, precisely similar to the McAllister coal of the Indian Territory. Some anthracite has also been discovered in this coal territory. The railroads are now penetrating the coal formations of Texas, and this great source of wealth will scon, doubtless, be rapidly developed. So far it is a virgin field. In addition to the true coals of Texas there is an immense bed of lignite which extends apparently across the entire State from northeast to southwest, in the eocene formation, It is said to be at some points 20 feet thick.
This lignite much resembles cannel coal, and doubtless would be made quite equal to it by a process of pressure by machinery.

It is very fat in various oils and gases.

Texas is peculiarly blessed with iron. In
Eastern Texas there are immense deposits of hematite or brown oxide of iron. It runs through many counties, often forming high hills, which are literally filled with it. These hills, which are literally filled with it. These ores contain from 40 to 75 per cent. of metal. In some places they are worked to some extent. The region in which these ores are located is heavily timbered, so that charcoal for reduction can be had at a nominal figure. The iron turned out is of excellent quality. In Robertson, Limestone and other counties of Central Texas the same quality of ores exist, and generally in close proximity to immense beds of lignite. But perhaps the grandest accumulations of iron perhaps the grandest accumulations of iron ores in Texas, and probably anywhere else, are in Llano and Burnett counties. It is here in connection with primitive rock, and appears mostly as magnetite. It rises out of the granite in immense seams and dikes. It has been wrought to a small extent, and found to yield from 75 to 90 per cent. of metallic iron, equal to the best Swedish. There is plenty of timber for charcoal and limestone for flux. Besides, coal has been found near by, and it is known to be abundant a little further to the north. Soapstone is abundant in the same localities, valuable for furnaces.

LABOR AND WAGES.

Some time ago the machinists in the employ of the Reading Railroad Company in this city handed to Mr. Paxton a petition for this city handed to Mr. Paxton a petition for an increase in their wages of 10 per cent., as everything in the way of living expenses is going up. This petition was sent to the company's headquarters in Philadelphia. Mr. Wootten, upon being interviewed in this city on Saturday evening, could not say whether this advance, as asked for, would be granted, as he considered such a matter as coming strictly within the jurisdiction of the private

pany, of Cincinnati, having proved too limited for the growing demand for their goods, the company have taken a permanent lease of the large building at Nos. 78, 80, 82 and 84 Harrison street, and built a new foundry in connection therewith. They now have three stories of their large factory in full operation and will add another story to the building in the spring, and cover the entire lot with additional foundry and other buildings. They Coal Company, and with misrepresenting the manner in which the plaintiff company treat their employees. They charge that these articles set forth that they treated their employees badly, in not providing decent and comfortable houses for them to live in, and that they showlitted them to a serf-like house. that they submitted them to a serf-like bond-age, and urged miners not to work for them: in this year.

The Cincinnati Stamping Company, successors to the Sellew Mfg. Co., at Cincinnati, are now putting up a new and capacious building, which will be supplied with first-building, which will be supplied with first-building. ducing their men to leave. The owners of the Labor Tribune are reported as saying that they cannot see where the action for libel comes in, as all the articles published were items of news. The paper is published in the interest of workingmen, and they will always publish and show up corporations or anything else that opposes the interests of the laborer. As regards the Waverly mines, they are the only ones that are not in the organization, and other operators were com-plaining that, while they complied with the demands of the union, Secretary Jones al-lowed the Waverly Company to undersell and do as they pleased.

The Commissary-General of Immigration time very busy on some heavy orders. The works, by the recent additions, are largely increased in their capacity, and will doubtless do a heavy business this year.

Some comparisons of the cost of the application of spirits, petroleum and illuminating.

The Iron Age

Metallurgical Review.

New York, Thursday, January 5, 1882.

DAVID WILLIAMS Publisher and Proprietor Editor. JAMES C. BAYLES . . .

RATES OF SUBSCRIPTION

INCLUDING POSTAGE.

THE UNITED STATES, BRITISH AMERICA AND SANDWICH ISLANDS.

PER ANNUM, POSTFAID.

Weeki: 7 Edition: \$5.00-£1-25 france-20 marks-12 forins -0 roubles (coin)-25 lire-20 pestos.

Semi-Montniy Edition: \$5.00-10/-12/6 france-10 marks-6 florins-3 roubles coin)-12/6 lire-10 pe-

setos.

Monthly Edition: \$1.25,-5/-6/4 francs-5 marks-3 florins-1/6 roubles (coin)-6/4 lire-5 posetos.

REMITTANCES

should be made by draft, payable to the order of David Williams, on any banking house in the United States or Europe; or, when a draft cannot be obtained, in postage stamps of any country.

NEWSDEALERS OR BOOKSELLERS

newsdealers or Booksalers or hope in any part of the world may obtain The Iron Age through the American News Company, New York, U. S. A.; the Wilmer & Rogers News Company, New York, U. S. A. and London, England; or the San Francisco News Co. San Francisco, California, U. S. A. RATES OF ADVERTISING.

One square (12 lines, one inch), one inaertion, \$2.50; one month, \$7.50; three months, \$15.00; six months, \$25,00; one year, \$40.00; payable in advance.

CHICAGO......32 & 30 COL.
HENRY SMITH, Manager.
Builders' Exchange

CINCINNATI Bullors Bullders
T. T. MOORE, Manager.
CHATTANOOGA BLOWE, Manager.
S. B. LOWE, Manager.

BRITISH AGENCY,
The publishers of The Ironmonger, 44 Cannon street
London, England, will receive orders for subscription
and advertisements on our regular terms.

CONTENTS.

First Page .- The Cowper Hot Blast Stove. Magazines for Explosives. National Board of Trade. The United States Torpedo Service. Third Page .- Annual Review of the Metal

Fifth Page .- Annual Review of the Metal Market for 1881 (Continued).

Seventh Page.—Annual Review of the Metal Market for 1881 (Continued).

Ninth Page .- Annual Review of the Metal Market for 1881 (continued). Eleventh Page .- Annual Review of the Metal

Market for 1881 (Concluded). Industrial Items, Thirteenth Page,-Industrial Items (Conclu ded). Coal and Iron in Texas. Labor and Wages. Fourteenth Page.—Progress in Spanish merica. The Continental Iron Markets. The

Outlook for Iron in the West. The Atlanta Exhibition. American vs. English Steel. Fifteenth Page.—American vs. English Steel (Concluded). Rail Inspection. Proposed Re-moval of Disston's Saw Works. Iron Ore Impor-

tations Since July 1, 1878. Washington Notes. An Improved Ratchet Screw Driver. Locomotive Engineers. Gilding Steel. Seventeenth Page.—British Iron, Steel and Hardwares in 1881. The Duration of English Iron

Nineteenth Page .- The Duration of English Iron Ores (Concluded). Covering Boilers with Silk. Inter-State Commerce. Prevention of Over-

Twenty-second Page -Coke and Coke Crush

Twenty-third Page.-Trade Report. General

Twenty-fourth Page.-British Iron and Meta Markets, 1ron, Metals.

Twenty-fifth Page .- Foreign Trade Move ments (Concluded). Exports Imports. Old Metals, Paper Stock, &c. Philadelphia.

Twenty-sixth Page.-Philadelphia (Conclu ded). Pittsburgh, Chicago, Chattanooga, Boston, Louisville, Cincinnati, Baltimore Our English

Twenty-eighth Page .- Our English Letter (Concluded), Foreign. Double-Action Clutch Screw Driver. Scientific and Technical.

Thirtieth Page. Ericsson's Latest Invention. How Lost Cars are Traced. Thirty-fifth Page .- The Iron Age Directory.

Thirty-eighth Page.-New York Wholesale Thirty-ninth Page .- New York Wholesale

burgh Hardware and Metal Prices. Forty-sixth Page. - Boston Hardware and

protective tariff. This is the latest and strongest argument we have seen in favor of such a tariff. It used to be a maxim of Napoleon to find out if possible just what the enemy did not want him to do, and then do it. Having found out what this enemy of all law and order does not want done, we suggest that it is good policy to do it. Thet argument against protection is that when terminate. The Bolivians, from their mounwages are increased through the protective tain fastnesses, seem to look on compla- for 60 tender locomotives for the Paris-Lyons- present price of pig is maintained, both nails that, therefore, English steel plates are the tariff, expenses are equally increased, and cently. News from Chili will be looked for- Mediterranean Railway, 60 for the Suedbahn, hat when free trade lowers the cost of liv- | ward to in the United States with great and 10 for the Nordbahn; the Vienna-Neu- the East remains as it is, and goes no higher, steel in rails and in plates is not the same.

mend these sentiments to the workingmen. who know that their wages have been raised by the tariff, so that to-day they are getting fully double what their fellows abroad are getting, and at the same time the price of a barrel of flour or a pound of meat is less here than in Europe.

Progress in Spanish America.

Business prospects in Spanish America and Brazil for the current year are promising, crop accounts being, on the whole, favorable, and, with few exceptions, the political horizon cloudless. The Mexican Congress has just adjourned, after indorsing all the railroad concessions, with or without subsidies, the new National Bank schemes and proposed nickel coinage project. Mexico's frontier disputes with Guatemala were at one time quite threatening but there is now a well-founded hope the they will be settled without a resort to arms. The remaining four Central American republics are getting on without internal and external trouble-The coffee and indigo crops are ample, the latter bringing high prices. In Cuba the sugar crop will be about 15 per cent. larger than that of last year. The new Captain-General, Prendergast, it is expected, will prove as good an administrator of finances, &c., as his predecessor, General Blanco. The other West India Islands report good crops and are getting on quietly, except St. Domingo and Hayti, where revoutions have broken out again.

Colombia is doing well in point of material rogress. President Nuñez seems to be Republics, to come off at Panama, has proved a failure, only two or three responding to the call. It was hoped there to constitute the basis for arbitration among them and idea is generally regarded as premature, or, at any rate, ill-timed. President Guzman Blanco, of Venezuela, wants his Legislature power. Under his iron rule the country, expectations. In Brazil the elections under by troubles. Railroad building is going on most actively. The coffee crop has been coming one is reported damaged by drought during the blooming season in the two most productive provinces. A report says the sugar crop leads to some disappointment. On the whole, however, the Empire is Brazil to be superior to European. Uruguay revolution has been warded off, Ayres, whence he was expected to leave plate train is also to be laid down. for Europe. Business may now look up at Montevideo. The Argentine Republic South America. President Roca, through the good offices of the United States, has succeeded in making an acceptable treaty with Two large Siemens-Martin furnaces are to be Chili in the Patagonian frontier dispute. All internal difficulties have been smoothed down through his energy and tact, while the finances have taken such a favorable turn the gold standard, and capital and immigration flow into the country faster than ever. The machinery exhibition at Buenos Ayres in February next may prove a success. agricultural regions

Chili, although otherwise progressing almost cult problem of making some peace settlement with Peru which shall idemnify the former in involved by the war. Fortunately, the believed to be men of sufficient experience and ability to assist Chili with as much success as attended our mediation between Chili and the Argentine Republic, above referred Chili will not unlikely be glad to make some equitable arrangement not too severe upon the vanquished State, but vet leaving Fortieth Page .- New York Wholesale Prices unimpaired her honor and just claims of some indemnity, or security for such. Mr. Forty-fifth Page.-Philadelphia and Pitts Trescott's task will, in any event, not be an easy one. With the re-establishment of peace. Chilian copper production may soon be restored to what it was at the outbreak of the war. From Peru, the instigator of all the trouble, The Socialistic Labor Party, at its recent | Ex-Dictator Piérola has at length, the cable field seems to be clear for some stable government under the supervision of Commanruined outside of the Chilian lines by roving bands of marauders. It is, indeed, high time

ing, wages are also lowered; therefore the interest, for more than one reason. Taking a stadt Works have 80 for the Paris-Lyonsresolutions declare the tariff question in no way affects the true interests of the laboring population of the country, being a question of the country to a question of the country to the country tion of more interest to employers and used by them as an instrument to draw the work-by the work-by them as an instrument to draw the work-by the work-by them as a work-by the work-by the work-by the work-by the work-by the work-by the wor ing people into the old parties. We com- from our rough sketch, is an encouraging one, holding out good prospects for our busi-ness relations with that part of the New World, to improve which we hope the new year may materially contribute.

The Continental Iron Markets.

The condition of the German iron market continues very strong. Common pig iron, as well as Bessemer pig, is in great demand, and it is expected that several furnaces out of blast at present will be blown in shortly. ducers of finished iron, who have not been able to raise their quotations in proportion. Steel rails and railway materials in general are much sought after. The State Railway authorities have given out orders at Cologne for a large tonnage of steel rails, of which Bochum will supply 6200 tons, at \$40 per ton, and the Rhine Steel Company, 910 tons, also at \$40. The Phoenix Company at Laar will furnish 3600 steel sleepers, at about \$36 per ton. In France the demand for all kinds of iron continues very strong, and the effect of the advance on coke is now being made apparent in the value of pig iron, which has gone up. Merchant iron remains firm. Le Fer says that the prices are very firm at Paris, with a tendency toward advance. Building operations are fairly well carried on, as the weather has not yet been so inclement as to stop them materially. The principal Parisian constructors do not hesitate about giving out large orders to the forges, in spite of the higher prices and the approaching conclusion of various commercial treaties. The new law relative opular. The Congress of Spanish-American to the merchant marine has induced those houses who are connected with naval construction to decide upon increasing the extent of their establishments, and other yards will be started. In the Nord district, 190 frame a common law to that effect, but the frames is now a low figure for merchant iron, and 192.50 francs, and even 195 francs, is paid. In the Haute-Marne an order for 250 tons of pipes for the city of Paris has been to raise an army for the quelling of a revolu- given to the Bayard Foundry. The railway tion which he believes impending, but that companies are buying more freely from the body shows little inclination to increase his iron founders, while for iron manufacturers the position and prospects of the trade are meanwhile, fairly progresses, and crops fulfill excellent. The Société Braconnier are to expectations. In Brazil the elections under the new franchise have been unaccompanied Meuse. The Dronville Company have become the purchasers of the Liverdun forges, the sum to be paid being 635,000 francs. unusually large, 5,000,000 bags, but the the Ardennes the demand for malleable iron is somewhat quieter, but pig iron is in excellent request, and the foundries are offered considerably more work than they can undertake. The mills in the Loire and Centre have a full supply of orders. At the Saint showing an increase of nearly 400,000 tons, in a flourishing condition. American ma- Etienne Steel Works a new Pernot furnace is all of the first-class Bessemer ores seem sold chinery for sugar grinding and boiling has to be put in operation, and this differs from been officially declared quite recently in the usual furnaces of this kind in that the forge pig and bar iron. Ore for fettling that gas producers communicate direct with the furnace, instead of having the intermediary and the disturber of the peace, ex-President Colonel Latorre, had withdrawn to Buenos Martin furnace is to be erected, and a new Givors, Harel & Co. are about to apply the Cowper apparatus to their furnaces. At the is at present the most prosperous country in Baucaire Works, near Nismes, two furnaces have been set to work, and the third blast furnace will be ready in March or April.

It appears that the Thomas-Gilchrist process is not proving acceptable in France. Recently the Paris, Lyons and Mediterthat paper money is about to make room for ranean Railway Company gave an order for 200,000 tons of rails, with the express condisupplied, but ordinary Bessemer rails only. were laid down along various sections. It is cerning ore. considered to be yet too early to form new-process rails split and wear away reason of the agitation against the dephos-Preparations have, however, been recently commenced by the Société des Forges, of St.

erected there.

followed in different parts of the country. The Wiener Zeitung gives a glowing acount of the state of the Austrian iron trade. is growing very rapidly. In railway material the works have almost more than they can do; rails, fittings, rolling stock, wheels as the provisional President, Calderon, has whole energy of the establishments devoted been sent out of the country to Chili, the to their production. The Montan Zeitung gives the following list of orders already given out for execution in 1882 : Staatseisender Lynch. Meanwhile the country is being bahn Gesellschaft, 45 tender locomotvies for the Austrian Midland Railway, 10 tender locomotives for the Western Railway, and 10 hat this intolerable state of things should freight locomotives for the Austrian Railway; the Florisdorf Locomotive Works have orders

passenger carriages for Austrian railways, 80 covered wagons for the Northwestern Railway, and 10 petroleum wagons for the same company; the Ringhoffer Works will supply 100 covered wagons to the Northestern Railway, 300 coal cars to the Prag-Duxer Bahn, 300 coal cars to the Bohemian railways, 25 carriages and brake vans to the Suedbahn, and 10 beer wagons to the same company; the Hernalser Works, 31 passenger carriages for the Northwest Company, 80 covered wagons for the Elizabeth Company, and 14 various wagons for the same company; the Ganz Works have Pig iron shows a rapid increase in value, and this is causing some inconvenience to the pro- freight cars for Hungary, 140 wagons for the Kaschau-Oderberger Railway, and 40 for Servian railways.

The Ontlook for Iron in the West.

The close of the year finds the market in the West for iron in its various forms in a most peculiar condition. In some respects the year just ended has been one of great prosperity. The volume of business has never been equaled. The center of the iron trade, both in production and consumption, is moving steadily westward, and the demand upon the ore banks, the coal fields, the blast furnaces, the rolling mills and the steel works of the section west of the Alleghenies, has led to an unprecedented production and a marked increase in the capacity for production. The East has experienced a somewhat similar state of affairs, but not to the marked degree that it has been manifest in the West. This demand has been a continuous one. Times and seasons have not affected it, and the only drawbacks have been the difficulty in running the mills consequent upon the extreme heat and drought of the summer and the freight blockade of the latter half of the year. But as the new year comes in the question of an advance meets them, which their good sense advises them not to make, and which it seems well-nigh impossible not to make. Buyers seem determined to advance the rates on finished iron. We do not mean that they deliberately set to work to do this, but their action in many cases as surely tends to this as if they had held a meeting and resolved to pay 1/4 cent more. They desire to contract ahead, and, finding a disposition adverse to such contracts on the part of manufacturers, try to accomplish their point by offering an advance. A careful review of the situation and the outlook may help our readers to form a judgment as to the future.

First, as to ore, although the output of ore in the West has been largely increased, the Lake Superior region alone up. This affects not only Bessemer pig, but two months ago was offered at \$8 to \$8.50 at Cleveland, is now scarce at \$9.50. Foreign ores, of which considerable is used near Pittsburgh, have advanced considerably, owing to At the advance in freights. Whether there is any immediate relief will depend upon the time of opening navigation on the lakes and the demand for grain from Europe. If navigation opens early and grain moves freely to Europe, supplies of lake ores may be abundant and freights fall on foreign ores. The prospect of either of these reliefs does not look bright as we write. In pig the stocks are well-nigh exhausted. In the West so many furnaces have banked, owing to a short supply of coke, that the make of the past few months has been very much tion that no dephosphorized rails should be reduced and old stocks drawn upon. Bessemer pig especially seems in very great More recently, this company agreed to take demand, and it is quite improbable that the Railroad building is most active in the republic, and so is judicious settlement in the rails from the Creusot Works, and these months, owing to the reasons given above con-

The price of muck bar, as compared with as well as ever so far as its material interests a satisfactory opinion on the subject, but that of bar iron, is an anomaly. Good firstare concorned, has still to confront the diffi- it is reported that the engineers of the class muck bar has sold in Pittsburgh at \$46. railway in question say freely that the This same bar sold three months ago at \$40. Now, muck bar at \$46 is about 2.3 cents a some tangible manner for the sacrifices much more rapidly than the old Besse-involved by the war. Fortunately, the mer rails. The French ironmasters have pound for putting it into bar, would make 2.7 American envoys sent out quite recently are not yet made provision for adopting the new cents for iron. It should be stated, however, process, and it is probable that the true in fairness that this bar is not made into common bar, but into extras, so that even at phorized rails will be found in this fact, a 2.5 cent card it might pay to use small quantities of muck at this price in extras. In merchant iron the card is and has been Nazaire, to introduce the process, and it is for some months 2.5 cents, and, as stated not unlikely that the example will soon be above, at this rate the mills have all they can do, with a constant pressure on the part of advice. The nail market is in the same condi- are better than English ever were. been a time when, relatively to the production, the stocks were as small as at present. Even the than have the English. buyers concede that an advance could be maintained, and, if any should be made in bar iron, one will undoubtedly be made in nails. If the

this would be an argument for an advance. Before this reaches our readers, however, the Western Iron Association will have met, and the question to advance or not will have been

The Atlanta Exhibition.

The exhibition which closed with the end of the year at Atlanta, though limited in cope and not possessing the measure of general interest which attaches to exhibitions more varied in character, seems to have ecomplished a very important work, and those with best opportunities for judging believe that its influence for good will be immediate and permanent. It has brought together thousands of representative Northern and Southern men, and created a cordial feeling between them, which will do much to abolish sectional prejudices. It has given the Southern planters an opportunity to examine the newest and most approved machinery and implements applicable in farming operations, and the extent to which these have been appreciated is shown by the fact that large sales are reported by exhibitors. Trade thus created by purchases for use, will unquestionably grow to important proportions if properly encouraged. Another important benefit to the South will undoubtedly result from the visit of Northern capitalists to the South, in showing them many opportunities of profitable investment in un dertakings which the Southern people cannot well attempt, from lack of capital and experience. The South is an inviting field for enterprise. It is rich in resources and favored by nature in many ways. It is not an El Dorado, where fortunes can be reaped where no man has planted, but it is a country where a thousand dollars is worth more, and can be made more productive, if judiciously invested, than in any other part of the United States where it would be likely to seek employment. The opportunities in connection with cotton spinning and the manufacture of certain grades of cotton cloth, are very tempting, and we have no doubt they will be availed of to an extent which could not have been hoped for had this xhibition not been held.

But a still larger and more permanent benefit will be found to have resulted in stimulating the Southern people to a better appreciation of the profits and benefits of diversified industry. Already a great many are asking, Why cannot we have a mill, or a forge, or a foundry, or a manufactory of some sort in our town, to develop our resources and bring population? This question they are in any cases likely to answer for themselves in a very practical way, by raising the necessary capital and starting manufacturing on They have seen with surprise a small scale. and benefit the fruits of Northern enterprise, and have begun to realize that protection is not for one section, but for all, and that if the South has not had her share of its advantages, it is because she has neglected her opportunities and devoted her energies almost exclusively to agriculture. During the past few months there has been a great change in the sentiment of the Southern people on this important question. Zealous converts to the cause of protection are plenty, and they are making themselves heard through the newspaper press with a distinctness which would have astounded their predecessors of the last generation. The spectacle of the South 'solid" for protection, would be gratifying indeed, and considering everything—the poli tical as well as the economic aspects of the question-it would not be at all extravagant to predict such a thing. Meanwhile we shall look for the immediate results of the Atlanta Exhibition in a marked improvement in the cultivation and handling of the cotton crops, and in increased manufacturing consumption of this important staple.

American vs. English Steel.

A late issue of the New York Times has It would be particularly unwise to build American men-of-war of American steel, for, however good our iron may be, we have not yet been able to produce steel that is at all equal to English steel, and Mr. Vanderbilt prefers to import steel rails for his road at a very much higher price than he would have to pay for home-made protected steel." The utter absurdity of the first part of this extract, which advises against the use of American steel plates, is patent to every one who knows even cursorily the history of the manufacture and use of steel plates for the hulls of vessels and for boilers. It was in this country and at Pittsburgh that steel plates were first successfully manufactured and used, years before they buyers to place orders ahead. There is no could be made sufficiently low in carbon doubt that manufacturers are getting the in England to be used. It is not eight years Merchant iron, girders and sheets are in great demand, while the stove-casting trade is even rumored that some sales have been the London Engineer, we think it was that made above the card. Of this, however, we steel was not successfully used for plates. It have seen no proof. The workingmen are is less than this period that some eminent becoming uneasy, and are suggesting ad- engineer argued against steel plates before meeting in New York, declared against a tells us, withdrawn for safer quarters, and tires, axles, springs, &c., are occupying the vances. However, it can be said that the best some one of the scientific societies of England. manufacturers West are opposed to any ad- and his argument was received with almost vance, and if it is made it will be against their universal approval. American steel plates tion as the bar iron market. There has never manufacturers have had a longer and more successful experience in manufacturing them

Now about the last part, that "Mr. Vanderbilt prefers to import steel rails for his 'roads." If the intention of this is to argue and bar must advance, and if the price at best, it does not follow by any means, as the

tra mu int

fac

of certain tests that show conclusively that causes of this singular fact, which is a very certain American rails are better than any costly one to them." English rails ever laid down on that road. We know Mr. Vanderbilt has bought largely abroad, but it may be possible that it has not been because the foreign rails were the not been because the foreign rails were the best. It may be just barely possible that he delayed buying until certain brands and at Essen, Germany. that he wanted, and which had been offered him, were sold up. A correspondent answers the New York Times in effect as follows: "Mr. Vanderbilt will tell the cost of inspection, both chemically and mechanically, I feel it my duty to explain why such method of payment would be unsatisfactory and improper. that he delayed buying until certain brands The first principle of all inspection should be to place the inspector on an independent footing. This he cannot be if he is under the pay of the party whom he is going to control. I need hardly say that I can only undertake bloom inspection on the same inearly 20,000 tons." And yet certain newspapers reiterate this statement, that Mr. Vanderbilt prefers to import steel rails at a higher price than he can get them made. "rail which does not suffer in comparison at a higher price than he can get them made in this country.

We learn with pleasure that the Senate Committee on Claims has favorably reported the bill making an appropriation to satisfy the claim of Mr. A. H. Emery, of this city for the design and construction of the great testing machine now at the Watertown Arsenal. An appropriation was made to cover the estimated cost, but the real cost, with attendant expenses to the builder, was much greater than the amount appropriated. Mr. Emery has received \$31,500, and has a claim for \$129,000 for disbursements and duly ordered, especially when it is honestly an l intelligently performed, and the results are entirely satisfactory, as Mr. Emery's testing machine certainly is. The bill reported by the committee appropriates \$225,-000 as compensation to Mr. Emery for his work. It will be worth this to the country many times over, if the work of testing materials is committed to such a commission as that which began it: work by giving Mr. E nery an order for this great machine. As used at present, it is not likely to be of any great value to anybody.

A suit of unusual interest and importance. affecting the relation of manufacturers to railroads when the latter refuse to extend to the former the advantages promised as an inducement to build works and establish business along the latter's lines, has been brought by the National Tube Works, of McKeesport, Pa., against the Baltimore and Ohio Railroad. chooses for general analysis, which must agree with buyer's stipulations for the confront 1878. The allegations are that the tents of sulphur, phosphorous, silicon and plaintiffs located their works at McKeesport in consideration of an agreement with the Pittsburgh and Connellsville Railroad that, for the purpose of freight charges to eastern points (including Boston), McKeesport should be considered a competitive point, and that plaintiff should not be charged for such shipments any higher rates than those from Pitts.

The allegations are that the tents of sulphur, phosphorous, silicon and manganese, but if there be no such stipulations for the consideration. The inspector will have to satisfy himself that the steel is of proper chemical composition, and suitable for making steel rails of first quality. Part of such borings may be handed over to the works chemist to compare results with the inspector if desired.

The inspector or his agreement made up ready for his consideration. This includes the arguments on both sides and the Collector's rulings. It was observed in official quarters that it was a question which could be very easily settled. This being the fact, the inference would be that the decision would be favorable to the interest of first quality. Part of such borings may be handed over to the works chemist to compare results with the inspector if desired.

The inspector of his assistants are to have the use of new commercial terms, espectable. The inspector or his assistants are to have the use of new commercial terms, espectable. ments any higher rates than those from Pitts burgh; that the defendants have recognized this agreement since 1877; that the plaintiffs erected large works at McKeesport and shipped by way of defendants' road to Boston its merchandise, and have been required to pay therefor additional freight to that agreed upon under the head of "wharfage," and defendants refused to deliver the merchandise until the sums were paid. Upon the above showing this suit was instituted.

Elsewhere in this issue we publish a valuable table, compiled for us by Mr. Joseph Nimmo, Chief of the Bureau of Statistics, showing the importation of iron ores into the United States during the fiscal years 1879, and 1881, and for the four months ended with October last. From an importation of 150,800 tons in 1878-9, valued at \$343,034, it increased to 621,073 tons in 1881, valued at \$1,723,885. The details are interesting as showing the relative importance of the several sources of foreign supply.

The business embarrassments reported during 1880 have been few and relatively unimportant in New York in the trades especially addressed by us. Five hardware houses have failed, with aggregate assets valued at \$50,320, and liabilities to the amount of \$165,508. In the iron and metal trades there have been but two failures, with liabilities aggregating \$175,153, and assets worth \$40,988. This is not a bad showing. The total number of failures in New York was 391; the total liabilities reported, \$11,130,933, and assets valued at

We print elsewhere the first installment of our annual reviews of the iron and metal trades. These reviews are compiled with much care, and are of the greatest statistical making of the circular saws. When the much care, and are of the greatest statistical interest and value. The commercial history of a year is full of instruction to the manufacturer or merchant who will study it care-

If the intention is to say that foreign steel through from the eye to the perimeter, and it

Rail Inspection.

satisfactory and improper.

The first principle of all inspection should

Inspector to the Swedish Government and other railways.

SANDBERG'S SPECIFICATION FOR STEEL BLOOMS FOR RAILS AS WORKED IN 1881.

Time of Delivery. _ Dimensions.

Weight.

Marking.-Each bloom to be marked with the maker's name, either rolled on the sides or stamped in plain letters at the end, and also to have inspector's stamp after approval.

Mode of Manufacture.—The steel must be

claim for \$129,000 for disbursements and cast into ingots large enough to work down expenses. It is the duty of the Government into at least two blooms of dimensions reto recognize and pay for professional work quired. The ingots must be heated, hammered or rolled, as specified to clean blooms, ends cut square and perfectly solid, and the

tested from every blow by forging and bending cold to right angles.

The blooms will be passed in lots not exceeding 250 tons each. The inspector appointed by the buyer will select from each lot a certain number of blooms, not exceeding I per cent., to be rolled into rails of any sections at hand at the moment. Such rails must be free from cracks, flaws and other imperfections, and the cross-ends sustain

Sandberg's normal drop test without frac-

Inspection Chemically.—The steel must be analyzed for carbon by makers to show that it contains the stipulated amounts of from 0.20 to 0.40 per cent., and the inspector has the right to see that this is carried out, and also to take borings to check these analyses.

Besides the carbon testing, the inspector may take begings from any blooms or will be suffered by the importers. It was expected that the decision would have been reached to-day, but the press of public business was such that the Secretary could not give the matter his attention. He says, however, that he will certainly dispose of the question during the control of the control of the control of the claims of at the ad valorem race, as claimed by the importers. It was expected that the decision would have been reached to-day, but the press of public business was such that the Secretary could not give the matter his attention. He says, however, that he will certainly dispose of the question during the control of the c take borings from any blooms or rails he chooses for general analysis, which must

of material, and to superintend the testing as well as to inspect the blooms.

Inspection Certificates.—The inspector shall issue certificates of blooms inspected both mechanically and chemically, when requested, for any portion of the order passed, to state that the blooms are practically within the limits of the specification, and in his opinion suitable for making steel rail of first capitir.

Proposed Removal of Disston's Saw Works .- The Philadelphia Record says : Before another year rolls around there will be little left of the great Disston Saw Works at Front and Laurel streets. Since the founder of the house, the late Henry Disston, pur-chased a tract of land at Tacony, in the made five years ago. The business which was done in the narrow quarters of the Sixteenth ward works developed rapidly, until the present production of files is 700 they thought, especially in the schedules of iron and steel. The claims of the appellants in the recent hearing would only add to the the present production of files is 700 the present production of files is 700 tron and steel. The claims of the appenance iron and steel. The claims of the appenance in the recent hearing would only add to the complications of the steel-bloom question. This branch of the concern. This the circular saw and short saw departments, and during the present year additional buildings are to be erected at Tacony for the making of the circular saws. When the Disstons came to arrange for the erection of the new structures, they found that in order to provide ample accommodations for their business and its prospective gradual increase it would be necessary to purchase more land. Negotiations were opened with the heirs of the Green extate for 83 agrees of lend whether corresponding to the Carrying of the hoop iron question to the Supreme Court would put a quietus, it is hoped, in the future on that he work is never ending subject of litigation. The case, it is understood, was hoop iron cut to lengths of 11 feet and painted, but without a length of 12 feet and painted, but without a length of 12 feet and painted, but without a length of 12 feet and painted, but without a length of 12 feet and painted, but without a length of 12 feet and painted, but without a length of 12 feet and painted, but without a length of 12 feet and painted, but without a length of 12 feet and painted, but without a length of 12 feet and painted, but without a length of 12 feet and painted, but without a length of 13 feet and painted. the new structures, they found that in order to provide ample accommodations for their Mr. Joshua Rose, in a recent issue of the Green estate for 88 acres of land dechanical Engineer, says: "Sometimes a circular saw that has just been tempered and laid down to cool will commence to hum, and laid down to cool will commence to hu

IRON ORE IMPORTATIONS SINCE JULY 1, 1878.

rails are better than any American rails, we can only say that Mr. Vanderbilt will not say so. We know that there is in the office of the New York Central Railroad the record of certain tests that show conclusively that

| Countries. | 18 | 379. | ī | 880. | I | 881. | Four months ende
Oct. 31, 1881. | | | |
|---|-------------|-------------|---------|-----------|---------|-----------|------------------------------------|-----------|--|--|
| | Tons. | Dollars. | Tons. | Dollars. | Tons. | Dollars. | Tons. | Dollars. | | |
| Brazil | | 411111 | | | 1,022 | 2,507 | LULIS. | Donars. | | |
| Denmark | | * | | | 2,020 | 3,894 | | | | |
| France | 800 | 1,940 | 10,277 | 26,865 | 23,280 | 48,645 | 22,363 | 55,885 | | |
| French West Indies | 200 | 461 | | 111111 | -3,209 | 40,043 | | 1 | | |
| French Possessions in Africa and adjacent islands | 31.727 | 88,159 | 113,222 | 336,758 | 111,345 | 348,280 | 82,696 | 222.025 | | |
| Germany | 3-1/-/ | | - | | 5,197 | 12,406 | | 233,925 | | |
| England | 18,828 | 54,789 | 79,319 | 285,313 | 64,228 | 260,356 | 1,034 | 17,933 | | |
| Scotland | 353 | 787 | 79,319 | 21 | 2,526 | 11,653 | 32,697 | 122,014 | | |
| Ireland | 5,867 | | 12.164 | 20,073 | 10,640 | 27,378 | ****** | | | |
| Gibraltar | 21118 | 12,958 | | 27.42 | 3,250 | 10,271 | 7,452 | 17,175 | | |
| Nova Scotia, New Brunswick and Prince Edward | | | | | 3,250 | 10,2/1 | | | | |
| IslandQuebec, Ontario, Manitoba and the Northwest | * * * * * * | | | | ***** | | 5 | 37 | | |
| | | 0 | | | | 00 | | | | |
| Territory | 3,904 | 8,943 | 29,297 | 79,386 | 43.177 | 131,188 | 21,926 | 72,046 | | |
| British Columbia | ***** | | | ***** | 1,000 | 1,030 | 400 | 798 | | |
| British Possessions in Africa and adjacent islands. | | | | | | 24248 | 710 | 2,867 | | |
| British Possessions, all other | | ***** | 922 | 2,925 | | | ***** | | | |
| Italy | 9,008 | 20,786 | 33,755 | 88,928 | 65,229 | 179,433 | 43,681 | 132,707 | | |
| Portugal | | * * * * * * | 8,234 | 22,621 | 10,369 | 23,713 | 9.905 | 27,420 | | |
| Russia on the Baltic and White Seas | | ***** | | | | | 799 | 25,557 | | |
| Spain | 80,044 | 154,211 | 134,807 | 314 •74 | 263,575 | 604,790 | 125.903 | 270,060 | | |
| Spanish Possessions in Africa and adjacent islands. | | | | 2400 | 2,500 | 7,616 | ***** | | | |
| Turkey in Asia | | ***** | | ***** | 1,065 | 26,961 | 1,622 | 39,068 | | |
| Turkey in Africa | ***** | | 1,800 | 3,917 | 10,641 | 23,764 | | ***** | | |
| United States of Colombia | ***** | | 1,000 | 2,563 | | 7 | | | | |
| Uruguay | | ***** | | | | | 505 | 1,700 | | |
| Venezuela | * * * * * * | ***** | 209 | 517 | ***** | ***** | | ***** | | |
| Total | 150,821 | 343,034 | 425,012 | 1,192,961 | 621,073 | 1.723,885 | 351.704 | 1,019,792 | | |

The returns for a later period than October 31 have not yet been collated, but seem to indicate that the importation and use Foreign Ores during the present year will exceed anything ever known in the history of the Iron trade of the United States.

surface to be free from cracks or flaws.

Inspection Mechanically.—Previous to the charge being used, a small sample ingot to be tested from avery blow by formula to the control of the population of that vicinity.

The control of the states is about four years behind, unless some special action be taken this case will not come up for consideration soo than that time. The Government, howe in the meanting will call of the population of the population of that vicinity.

WASHINGTON NOTES.

(From Our Own Correspondent.)

WASHINGTON, D. C., Jan. 4, 1882

The Secretary of the Treasury has been in receipt of a number of letters from importers of steel blooms, urging him to hasten the decision of the controversy growing out of the assess-ment of certain importations at the specific rate, instead of at the ad valorem rate, as claimed by the importers. It was expected that the decision would have been reached he will certainly dispose of the question dur-ing the present week. The case has already been made up ready for his consideration. the right of entrance into the works at an times, to inspect the manufacture and quality of material, and to superintend the testing as well as to inspect the blooms.

The inspector shall region Cartificates.—The inspector shall

would gather in an elaborate argument. The gentlemen pointed out the necessity of a system of general classification of commercial Twenty-third ward, and removed the file with importunities for rulings at variance department of the works thither, the firm with the intent of the statute. They thought have been working with the intention of ultimately transferring the entire establishment to the country site. The Disstons soon ingless distinctions in terms, and the reaped the advantages of the change in respect to the file manufactory, which was made five years ago. The business which something else of the same character as manufactures of steel not otherwise provided for.

in the meantime will collect the higher rate, of duty, so as to be secured in all the revenue the article would realize. It would be possible for the Attorney General to have the case advanced if it were of positive interest to the Government, but as the Government is losing nothing, it is not likely that they will be in much haste about it.

Among the recent decisions of the Department, officially announced, is one on steel hammer-molds, the importers appealing from the decision of the Collector on the pretext that they are "steel in bars." The Secretary of the Treasury replies to the Col-lector that "The Department is in receipt of his letter of the 31st ultimo, reporting further on the appeal of Mr. W. G. Wetherall from his assessment of duty at the rate of 45 per cent. ad valorem on certain steel hammer-molds, imported by him per Nova Scotian, June 9, 1881. The molds in question, it appears, are cast in a swaged form, from 4 feet 4 inches to 4 feet 9½ inches in length, each each containing six hammers, and, when completed by separation and the boring of holes to receive the handles, are used by marble cutters; and the appellant claims that they are entitled to entry at the rate of 3 cents per pound, as steel in bars. Under date of January 4, 1871, the Department decided that hammer-molds of this description were liable to duty at the rate of 45 per cent. ad valorem, as 'articles of steel partially manufactured,' and your decision is therefore

Another decision has been rendered on bar iron or nail rods, in an appeal from assessment of duty at 1½ cents per pound. The samples of the merchandise submitted showed A very amusing incident occurred a few that the blooms are practically within the limits of the specification, and in his opinion suitable for making steel rail of first quality.

Note.—Exporters of blooms and rails may be at liberty to adopt the Sandberg specification, but unless he himself is intrusted with the inspection both mechanically and chemically, he cannot be responsible for the results. An inspection book showing that this specification has been executed both mechanically and chemically shall be handed to the buyer, who shall then pay the inspection fee, which on no account is to be paid by the maker.

Note that it was about 13-32ds inch thick and to be used in the market an article, the value of which the Secretary tells. It appears that the specification appeared, and of which the Secretary tells. It appears that the secretary was on a railway train, and accupied a seat immediately behind two gentlemen who were engaged in a very earnest discussion about steel blooms. As their results. An inspection both mechanically and chemically shall be handed to the buyer, who shall then pay the inspection fee, which no no account is to be paid by the maker.

Note Tiff the street, Philadelphia, Pa., are days ago in which the Secretary tells. It appears that the following: On "bar inch or more than 2 inches thick, and the self-the value of duty named, under the provision for duty named, under the provision for bear inches of duty named, under the provision for bear inches of with the inspection both mechanically and chemically, and the inspection both mechanically and the inspection both mechanically will posted, he did did not think it necessary to avoid hearing. The conversation was carried on for some characters and countries and manufacturers will not be sold drawn mild seel tubing, and for bushings that it was about 13-32ds inch thick, and to be used in the market an article, the value of which the Secretary tells. It appears that the following: On "bar inches thick, and to he amble the subject being one o him as sound judgment, in that casual talk between two intelligent men than a person would cather in a person would cather in a person would cather in a person in the casual talk as a person would cather in a person in the casual talk as a person in the casual talk as a person would cather in a person in the casual talk as a person in the iron. Bar iron may be used for making nails, and the fact that this merchandise is known as nail rods does not render it necessarily not designations, so that by giving the same thing a different name foreign manufacturers and importers could not amony the Government with importunities for religious designations. Upon all the facts, the department decided to sustain the assessment of duty, and the Collector's decision was therefore with importunities for religious designations.

> There is probably no display on the fair grounds at Atlanta that is at once so sugges-

to completion. The short saw department, course would be to have the question which is an important element of the works, will be continued in the city, but the time will not be long before the great manufacture department. As the business of the Supreme Court of the United States is about four years behind. zircans, &c., including fine specimens of the newly-found gem, Hiddendite, which rivals the diamond.

> Locomotive Engineers.-The Brotherhood of Locomotive Engineers, which has its headquarters in Cleveland, Ohio, has just closed a year of unusual prosperity and peace. Mr. T. S. Ingraham, in the Engineer's Monthly Journal, says: "Between October of 1880 and the close of September of 1881 and the close of September of 1881. we have instituted 15 new lodges, with a gain of 1500 in membership. We have not had during the year a strike or danger of one, and nothing based upon one has been brought up for consideration. Our convention was a great success in more than one way, and had a large influence in our favor with the public." He adds that on January 15 a union meeting of all the lodges in the vicinity of this city will be held in New York under the auspices of Division No. 145. It will be purely social, and fully 30 lodges will be repre-

> Gilding Steel .- Polished steel may be beautifully gilded by means of the ethereal solution of gold. Dissolve pure gold in aqua regia, evaporate gently to dryness so as to drive off the superfluous acid, re-dissolve in water, and add three times its bulk of sulphuric ether. Allow to stand for 24 hours in a stopped bottle, and the ethereal solution of gold will float on the top. Polished steel dipped in this is at once beautifully gilded, and by tracing patterns on the surface of the metal with any kind of varnish, beautiful devices in plain metal and gilt will be produced. For other metals the electric process is best

diameter. The thickness of the walls varies from 1-16th inch up to ½ inch. This range of sizes is sufficient to cover a very considerable variety of work

The deliveries of quicksilver at San Franbar iron. Upon all the facts, the department decided to sustain the assessment of duty, and the Collector's decision was therefore affirmed. The provision mentioned in the appraiser's report, upon which the Collector relies for his classification, is quoted as follows: "# But on all iron in slabs, blooms, loops and more advanced than pig 51,800 flasks in 1880 and 66,200 flasks in lows: "* But on all iron in sians, year are 1517 to 1880 and 66,200 flasks in blooms, loops and more advanced than pig 51,800 flasks in 1880 and 66,200 flasks in iron, except castings, shall be rated as iron iron, except castings, shall be rated as iron is mallest in many years, amounting to only in bars, and pay a duty accordingly." The smallest in many years, amounting to only 727 flasks, valued at \$22,482. There were the many years are 1880 and 66,200 flasks in 1890 and 66,200 f But all iron in slabs, blooms, loops, or other not a flask sent to Honkong last month, an forms, less finished than iron in bars, and unusual omisssion, and only 200 flasks were more advanced than pig iron, except castings, shall be rated as iron in bars, and paya duty accordingly. * * * * * This is not applicable to the present case, because the iron is not less finished than iron in bars. from 38 to 42 cents drove Chinese buyers from the market.

A recent English invention, relating to furgrounds at Atlanta that is at once so suggestive and instructive, so comprehensive and yet so detailed, and at the same time of so much practical importance to the South as a whole, as the exhibit made by the Richmond their is a covered with loose fire-brick. Underneath and Danville Railroad. It shows almost at a this is a second grating, the openings through and Danville Railroad. It shows almost at a glance the immense resources of the South, and, studied in connection with the other Southern exhibits, demonstrates beyond all question that the field of profitable investment in this section is practically boundless. In the display made by the Richmond and Danville combination there are from North grated valve, and passing up the grated valve, and passing up the grated valve, and passing up the grated valve.



PAWTUCKET, R. I.,

MANUFACTURERS OF

FILES AND RASPS.

ESTABLISHED 1863.

Capacity 1000 dozen per day.

GOODS WARRANTED TO GIVE SATISFACTION.



WITH PATENT ADJUSTABLE ATTACHMENT. The only Saw that can be adjusted for either a One-Man or a Two-Man Saw. We make the following lengths, 3½, 4, 4½, 5 feet. Send for sample.

WHEELER, MADDEN & CLEMSON MFG. CO., Middletown, N. Y

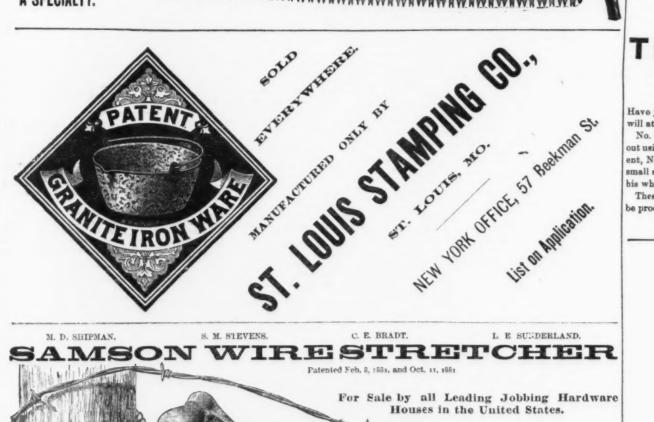
HARVEY W. PEACE, VULCAN SAW WORKS, Brooklyn, E. D., N. Y.

Hand, Panel, and Rip Saws,

Also, MILL, CROSS-CUT AND CIRCULAR SAWS.

BAND SAWS

A SPECIALTY.



Samson wire stretcher

For Sale by all Leading Jobbing Hardware Houses in the United States. MANUFACTURED BY We call your at-tention to a new in vention in the line of Fence Wire
Stretchers. Its
line of draft is direct
and it is always self-adjusting.
Its construction is such that the Samson Novelty Works, windlass operates independent of the frame, and having a double handle, which is an important feature, it enables the operator to stretch nearly twice as much wire at one operation. We challenge all other stretchers to a fair trial and comparison. The Samson is also a ready and convenient hoisting tackle. Send for somples and give it a trial. DE KALB, ILLS. Send for Circulars and Price List, showing our lib-

JOHN E. SWAN & BROS., Ld.,

IRON MERCHANTS.

Glasgow and Middlesbrough,

Scotch & English Pig Iron.

e. f. i. to America $\frac{\text{and}}{\text{or}}$ f. o. b. British ports

Old Iron Rails, Puddled Bars AND MANUFACTURED IRON.

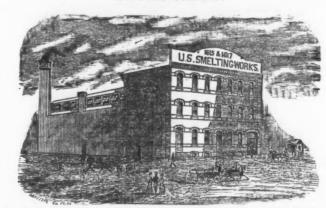
THE FRENTRESS STEEL

eral discounts to the Wholesale trade



ST. LOUIS WIRE FENCE CO., The Frentress Barb Wire Fence Co., 814 & 816 N. Second St., St. Louis, Mo. East Dubuque, Illinois.

UNITED STATES SMELTING WORKS,



METALS.

Brass Castings and Solders of all Kinds.

PIC AND BAR TIN. PIG AND BAR LEAD.

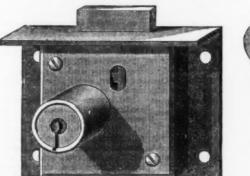
Pig Brass and Copper, Spelter, Antimony, &c. 1615 & 1617 Spring Carden Street,

PHILADELPHIA.

GEORGE HUNT,

M. S. STOKES.

TWO NEW LOCKS.





THE EAGLE LOCK CO.,

TERRYVILLE, CONN.,

Have just added two new and valuable patent locks to their already large variety, which will at once commend themselves to the trade.

No. 6101 (Brass) and 6117 (Iron), represented by the above cut, may be locked without using the key, by simply pressing on the plate in the end of the tube. The other patent, Nos. 6201 and 6217, is a lock similar in appearance, but is so constructed that with a small scrow driver any dealer can adjust the lock to an endless variety of keys, or make his whole stock "alike" to fit one key, without opening the lock or affecting its security.

These patents have been applied only to drawer and cupboard locks as yet, but will soon be produced in chest and wardrobe locks.

For Sale by Hardware Jobbers Throughout the Country.

THE PERFECTED REMINGTON



Business Houses.

Used and Recommended by Thousands of the Largest Houses in the Hardware and other Trades.

Send for circulars with prices and selected list of patrons and testimonials.

Every Machine Guaranteed Satisfactory.

E. REMINGTON & SQNS.

281 & 283 Broadway, NEW YORK.

124 S. 7th St., Philadelphia. 38 Madison St., Chicago.

THE AMERICAN MACHINE CO., MANUFACTURERS OF

Lehigh Ave. and American St., Philadelphia.

SPECIALTIES: Fluting Machines, Hand Fluters, Plaiting Machines, Christmas Tree Holders, Bickford Portable Pump, Mrs. Potts' Patent Cold-Handle "Crown" Irons, Ice Cream Freezers and Cake Mixing Machines.

(From our Regular Correspondent.)

Now that the current year is drawing near to its conclusion, and accounts, balancesheets, and stock-taking are deemed of more importance, relatively, than other matters, the business of the twelve months. We cannot, it is true, deal with the complete statistics of production and disposal at present, but we possess a sufficient number of proceedings while they are comparatively fresh and likely to prove useful.

The period cannot be termed a year of unbroken activity, nor, on the other hand, would it be correct to class 1881 with the bad years. In many departments of the iron and steel trades, indeed, there cannot be the slightest doubt that the production, when fully elicited, will be found to have been materially in excess of anything ever before attained. It must be borne in mind, in fact, that the low selling prices of certain classes of materials and commodities during a portion of the year have been in consequence of this large production, and not in any sense owing to its absence. Profits were limited, it is well known, during several months, but it is probable that in numerous instances the augmented turnover may have compensated, sible to clear cent. per cent.; indeed, to pay all outgoings, and secure a clear 15 @ 25 per cent. is pretty much an outside result. Every year competition grows keener both at home and abroad. We still have the whole world as our market, but we no longer monopolize the orders of the non-producing nations. On the Continent of Europe we are confronted everywhere by diligent and intelligent rivals, and in the United States we

FIRST QUARTER.

The year opened favorably, with hopeful anticipations in almost all directions, and with a nearly unanimous impression that the iron trade was in a sound and healthy condition. There were not a few persons who held most sanguine views as to the then near future; indeed, it would be safe to state that the majority of the members of the trade entertained the helief that they would make a tained the belief that they would make a fresh departure in a forward direction from the New Year's advent, and go ahead without retrogression for a very long time. The statistical position at the end of 1880 had been found to be somewhat more favorable than had been feared, the 739,000 tons of Scotch and 250,000 tons of Cleveland pig being lower totals than had been foreshadowed. In consequence of this hopefulness and the general disposition to "look ahead" one of the first movements in January was a rise of 2/ in Scotch warrants, which went up to 53/, while Cleveland No. 3 was quoted 40/@41/, and West Coast hematites of ordinary makers' brands were held at 64/ and No. 3 at 62/. The manufactured iron branches were quietly engaged, and were encouraged by the more favorable reports received from the Continent and the United States. The hardware manufactured the New Year's advent, and go ahead with-United States. The hardware manufactu-rers were not busy in the strict sense of the word, but they had a fair amount of work in hand, and expected that their orders would become more numerous as the year grew older. At Sheffield, in fact, the cutlery, tool, and electro-plate trades were well em-ployed, and at Birmingham and Wolverhamployed, and at Birmingham and Wolverham-ton matters were very much as they are usually just after the Christmas holidays. In the most sanguine scarcely ventured to look for an early improvement. By the last The collar se of Brown, Bayley & Dixon (Limited), Sheffield (since reconstructed and again in regular operation), excited no partibeling at work, and in Connal's stocks 535,630 ular surprise, and had no ill effects upon The steel-rail mills in the similar concerns. The steel-rail mills in the early portion of January were respectably engaged, 40 lb section and the like being quoted £6. 12/6, and heavy sections £6. 5/@ £6. 10/ per ton, with numerous inquiries. Iron rails were quiet at £5. 2/6 @ £5. 7/6, while Welsh bars were steady at £5. 2/6 @ £5. 5/. In Staffordshire the list houses maintained marked bars at £7. 10/, at which limit business was only on a limited scale was reported scarce and £4. 5/. It, with blooms, was strong at £4 @ £4. 5/. It, with blooms, was in some demand for the United States. About the second week of the month Scotch pig assumed a steady tone, although warrants were 51/6, Gartsherrie No. I., 63/; No. 3, 54/; Eglinton No. 1, 54/, and No. 3, 51/6. The Clyde shipbuilders were fully occupied—in deed, it will be seen that throughout the year this important industry has been prosperous, this important industry has been prosperous, and increasingly so as the year nears its close. There were 118 furnaces at work in Scotland at this juncture. In Cleveland there was also a steady market, No. 3 being 42/, the local manufacturers of plates and angles having an enormous demand, mainly from the shipyards. In the middle of Januar complaints began to be heard from Stafford-shire, and ordinary merchant irons became distinctly weaker. The tin-plate manufacturers discussed the question of limiting the make, but arrived at no definite decision. At the end of January, Sheffield, Birmingham and Wolverhampton experienced a bet-ter export call for hardwares, but the home market remained very dull and profitless.

February opened quietly in all directions,

British Iron, Steel and Hardwares on 1881.

Crude irons were without special changes, but the large and growing reserve stocks depressed the market, and made speculators, as well as trade buyers, very shy. Scotland had added 2000 tons to Connal's stores during January, and in Cleveland the increment had been nearly 5000 tons. Scotch warrants consequently declined to about 51/1, and Cleveland No. 3 to 40/, makers' iron being lower in proportion. Steel rails continued in good demand at, nominally, £6. 10/ to £7, and there was a good export inquiry for old it may prove useful as well as instructive to attempt a review of the chief features of little new business was reported, and com In merchant iron petition was proportionately strengthened. Common Staffordshire bars sold at £5. 7/6, although there were those who held out for higher figures under the impression that the agitation of the miners and ironworkers for ascertained facts, and so considerable an higher wages might cause serious disputes amount of statistical data, that we may advantageously attempt to sum up the year's ened a general strike for a 10 per cent. advance, but in the end wiser counsels prevailed, and the agitation subsided. At Sheffield the and the agitation subsided. At Sheffield the cutlery trade was fairly brisk, with a strong call for razors. Tinplates were dull, but thought to be improving. The second week of February brought no improvement; on the contrary, general quiet prevailed, and renewed complaints were general as to the severity of competition and the smallness of profits. The uneasiness of labor continued to excite fears, and, inter alia, the Wear shipbuilders (platers, &c.), obtained an adto excite fears, and, inter alia, the Wear shipbuilders (platers, &c.), obtained an advance of 71/2 per cent. on piecework and 2 per week on day wages. The Teeside operative engineers also agitated for higher paytive engineers also agitated for higher payments, but the employers, headed by Bolckow, Yaughan & Co., stood firm and refused their requests, despite threats of strikes. In the same way the cutlery manufacturers of Sheffield declined the demand of the tableaugmented turnover may have compensated, in a measure, for the lower margins on separate items. This may not be true of many lines of goods, however, and in any case it should be remembered that we carry on business nowadays under conditions widely differing from those in force a few years ago. In all the ordinary branches of the metallurgical industries the era of enormous profits has ended. It is no longer possible to clear cent. per cent.; indeed, to pay all outgoings, and secure a clear 15 (@ 25 per gentless and secure augmented output, with a coincident decrease in shipments and home consumption. Alto-gether the surplus was estimated at about 1,200,000 tons, and the legitimate demand was so limited, comparatively, that fully 550,000 tons of Scotch warrants were held 550,000 tons of Scotch warrants were held by speculators. The failure of a firm of "bear" operators at Glasgow about this time disturbed the market. Their operations had been to the extent of tens of thousands of telligent rivals, and in the United States we have foemen worthy not only of our steel, but also of our iron. In the latter case, unfortunately, the "worthiness" takes the form of a prohibitory tariff, which excludes a majority of our manufactures from the country. Bearing these considerations in mind, we may not improbably regard 1881 as a good average year, and may venture to hope that it will prove to have been the means of securing an era of greater prosperity during 1882.

EIRST OUADERS OF AREAS. way stations alone. Seventeen works were stopped at the time, decreasing the production 34,000 boxes weekly, or 150,000 monthly, but seven this failed to resuscitate prices, and a suggested restrictive policy had no greater influence. At the end of February the only feature of note was a better American demand for hoops, and some encouraging signs in the steel-rail branch. The hardware trades

were only moderately engaged.

March opened with bad weather and very March opened with bad weather and very dull markets in all directions. Crude Irons were universally weaker, partly owing to the quiet demand and partly by reason of forced sales by second holders. Scotch Warrants were 48/8; Gartsherrie No. 1, 59/, and No. 3, 51'; Cleveland No. 3, 38/6, and Hematites, 2/6 @ 5/ cheaper. The net increase in Cleveland stocks in February had been over 21, 700 tons with 120 furnaces going. The 21,700 tons, with 120 furnaces going. The Darlington Iron Company suspended rayment without exciting any particular remark. The Board of Trade returns for February showed our total exports to have been 16,835,550 lb, against 16,504,708 lb in 1880. The iron and steel shipments were 192,870 tons, valued at £1,551,372, against 264,252 tons, valued at £1,989,972. The only improvement was in pig and railway iron to the United States. Toward the middle of the United States. Toward the middle of the month everything grew even duller, and there was an unquestioned, and perhaps unreasonable, pessimism everywhere, save as regards rails, blooms, and a few special lines. At Sheffield only the heavy trades showed respectable results. The stoppage of the Northfield Iron Company, of Rotherham, excited no surprise. Finer weather pro-voked a little better anticipations, but the home market seemed so entirely hopeless eek of the month Scotch shipments showed being at work, and in Connal's stocks 535,630 tons. About this time the British Iron Trade Association issued its statistics as to 1880 Association issued its statistics as to 1850. Among other points these gave the aggregate stocks on hand on December 21, 1880, as being 1,541,411 tons—figures which, even now, did not tend to brighten the outlook. Thus the first quarter of the year began well and ended most indifferently.

SECOND QUARTER.

April opened favorably in respect of eather. Operations in Scotch warrants and in pig iron itself were, nevertheless, "frosted" by the 538,000 tons at Glasgow and 413,000 tons in Cleveland, to say nothing of the reserves elsewhere. Warrants at Glasgow stood at about 48/10, and Cleve-Warrants at land No. 3 at 39/, makers' irons being in proportion. Hardwares were still quiet, a proportion. Hardwares were still quiet, a notable incident being the increase of Nettle fold's discounts on wood screws by 10 per cent. The heavy trades were relatively better employed than the lighter industries, especially in Bessemer production. With continuance of fine weather and the const quent opening of the Northern ports, the second week of the month of showers largely absent on this occasion-brought a slightly improved tone in pig iron, while Staffordshire finished iron officially declined. The Scotch ironmasters discussed the question of limiting the output, but arrived at

makers' brands at 57/6. Cleveland No. 3 was 38/6, and ordinary West Coast hema-tites (with 58 furnaces working) at 59/ for No. 1, and 57 for No. 3. The iron works were moderately engaged, and the Bessemer steel works still fairly busy. Early in May it was thought that tin plates showed increased firmness, with lower stocks, and an advance of od. @ 1/per box was reported, making ordinary cokes 16/@ 16/6 per box f.o.b. Livpool; a further rise was prophesied. Notwithstanding the plenitude of money, Scotch warrants became easier, and during the first warrants became easier, and during the first week of May went down to 47/2, Cleveland No. 3 at the time being quiet at 38/. In Cleveland the total stock on May 1st was 411,981 tons, an increase of 5624 tons in April. West Coast hematites were dull at 58/ for ordinary No. 1 and 56/ for No. 3, with 57 furnaces working. In South Wales some commotion was caused by our announcement that the Curartha Warks would thence. nent that the Cyfarthfa Works would thence forward be withdrawn from the iron-rail trade and probably devoted to steel. The mills had produced about 800 tons of rails weekly, and, as is well known, the Crawshays had been pioneers in the iron-rail industry. The Board of Trade returns for April were unfavorable, and, therefore, helped to confirm the existing dullness. As the month progressed no improvement was visible, and, as a natural sequence, a discussion arose in Cleveland as to the advisability of effecting some limitation of the output of pig iron. Toward the end of May several causes seemed to unite in bringing about a slight change for the better. The extremely single change for the better. The extremely fine weather—better than usual at the season—favored harvest prospects, and the ultra low prices apparently convinced merchants and others that they had nothing to gain by

June, accordingly, brought a somewhat alleviated state of affairs in point of orders, but prices of all kinds of iron were excessively low. Here and there the works were found to be doing a little more in several found to be doing a little more in several branches of the iron trade proper, while the steel-rail mills were well engaged, not only in England and Wales, but also on the Continent and in the United States. Scotch warrants improved to 46/, but on the West Coast several furnaces were stopped. Elsewhere similar stoppages were noted. The Clyde shipbuilding yards continued very busy, the May launches reaching an aggregate of 36,753 tons, against 17,000 tons in the same month of 1880. In Cleveland stocks of pig increased 13,873 tons during May, and in Scotland stant additions were recorded. Hardwares were moderately inquired for, but prices continued excessively low. As the prices continued excessively end of the month approached there was again the rumor that the production would be restricted in the North, and upon the strength of that report prices stiffened somewhat. Hardwares began to be in decidedly better demand, chiefly owing to the excellent influ-ence of the fine weather upon the home market and the leveling up elsewhere.

THIRD QUARTER.

July brought with it a few further symptoms of a cheering nature, and the beginning of the second half of the year was attended by not a few hopeful indications. The Ger-nan (Westphalian) ironmasters had decided to reduce their output of pig iron by 5000 tons monthly, or 11 per cent., and on July 4th the Cleveland ironmasters passed a resolution advocating a policy of restriction, and inviting the Scotch ironmasters to join them in its embodiment. Cleveland stocks reached in its embodiment. Cleveland stocks reached 431,326 tons, an increase of 5,472 tons in June, and Scotch stocks in Connal's stores alone were 56,755 tons. Cleveland No. 3 was 37/3, and Scotch warrants were 46 to, with makers' iron pro rata. West Coast hematites were rather better, with 55 furneces working, and with larger shipments. naces working, and with larger shipments. In finished iron there was a rather better tone, owing to the giving out of good export orders, but in a general way underselling was much in vogue and profit meager. A steady American call for strip and hoops was reported, and sheets were strong, lattens at £9. 17/6. August opened under these rather more cheerful auspices; indeed, the remainder of the year presents a record which is, fortunately, mainly one of steady progress, with checks here and there of a relatively unimportant description. At the period under review, perhaps, heavy manufactured iron and merchant sorts moved off most freely, and in some cases at advances of 2/6 to 5/per ton. This enforcement of higher rates alone demonstrated the substantial character of the change and, pari passu, the comparative rapidity with which it had come about. It soon became known that even common as now, profits were meager, but there was, and in the course of a highly ferruginous the appearance of a highly ferruginous the comparation. semer sorts, rails, wire and rolled iron. Bolckow-Vaughan, previously busy, booked an Australian order for 17,000 tons, and Moss Bay 15,000 tons for the same part of the world. The Board of Trade returns for July were favorable, showing a slight increase over July, 1880, and an expansion in the shipments of many kinds of iron and steel, especially bar, angle and rod, railroad, wire, hoops, sheets and plates. The British Iron Trade Association issued a report steel, especially bar, angle and rod, railroad, wire, hoops, sheets and plates. The
British Iron Trade Association issued a report
showing the stocks of pig iron on June 30th
here, here, for for the specially bar, angle and rod, railinto a "limited," but the public did not fully
respond, not from any distrust of the conceru, but from the general want of confidence in "limited" ventures arising out of to have been 1,608,761 tons; the production former failures of these companies. The during the six months, 4,134,821; and conduring the six months, 4,134,821; and consumption, 3,824,521. Crude irons in Scotland and Cleveland continued weak in price, but with a large and growing turnover, par-ticularly in the North of England. Scotch warrants were 46/4, and Cleveland No. 3, 37/3. Hematites were stronger and in better request, with large shipments. The narrequest, with large shipments. The narrequest shipments are presented as before. The locomotive snops and general engineers, however, became busier, and there was no falling off in the locomotive snops and general engineers. est, with large shipments. The har- tion in which are still fresh in mind-namely, a dewhich are still fresh in mind—namely, a de-preciation of perhaps 20 per cent. in the ag-gregate returns of the whole country. This knowledge, however, was not attained at the time of which we are now writing. With the exception of pig iron, almost all other the exception of pig iron, almost all other sorts of iron and steel improved, and the works were enabled to boast of ample employment. The state of the rail mills may be inferred from the mention of the fact.

to an end with fair prospects and a better record as to actual sales than several preceding months.

At the beginning of September, Scotch warrants were 45/11, with fair shipments and plenty of work at the foundries, shipyards, &c. There were then 118 furnaces blowing. Henatites continued firm, with a good daypard at 18 for wired with a good demand at 58 for mixed lots, 58/6 for No. 1, and 56/6 for No. 3 brands. The shipments were very large. Cleveland pig was quiet, but steady, No. 3 at 37. Stocks had increased 500 tons only, to 438,151 tons, during August—a fact which led to the expectation of an early change for the better. In finished iron there was no appreciable alteration, but the works were for the most part fairly engaged. About the second week of the month greater animation was observable, and many signs were noticeable of renewed activity in the leading branches of the iron and steel trades, as well as in many lines of hardwares. The Board of Trade returns for August showed total account of the state of total exports worth £21,180,695, against £19,114,315 in August, 1880. Iron and steel figured for 361,271 tons, worth £2,482, 518, against 294,586 tons, value £2,207,169. 518, against 294,586 tons, value £2,207,169, in August, 1880. The average price of the iron rails shipped was £5. 16 11½, and of the steel rails £6. 12.8¼, while the steel (unwrought) averaged £7. 14.6½ to United States ports. Another feature which tended to excite the market was the proposal of the Scotch ironmasters to reduce the production. They afterward met the Cleveland smelters at Carlisle and arranged to ston a specified. at Carlisle and arranged to stop a specified percentage (121/2) of the furnaces in each percentage (121/2) of the furnaces in each locality for a period of six months from Oc tober I. As soon as the mere rumor of this intention got abroad pig iron experienced a bound upward, and, as we know, has since been on higher ground than for a long time previously. At the same time, many new orders for manufactured iron were placed, and the steel-rail mills had no diminution of and the steel-ran mins had no diminution or activity. Thereafter, to the close of the month, a brisker tone was observable all round; prices of crude iron were lifted several shillings, and almost all sorts of iron moved onwards. Scotch warrants reached 51/ and thereabouts; Gartsherrie No. 1, 60/, and No. 2, 25/6 (Charlend No. 2, 25/6 and 10. and No. 3, 52 6; Cleveland No. 3, 42 6, an ordinary West Coast Hematites, 60, for No. 1 and 58/ No. 3.

FOURTH QUARTER October did not bring quite a "boom" of the American kind, but it opened in a very sanguine manner, with the utmost hopeful-ness on almost all sides, and with the subness of almost all sides, and with the substantial background of well-employed works and numerous inquiries. There were 562 furnaces blowing on October 1, against 567 on September 1, and 561 on June 1, not counting the 15 furnaces to be stopped under the restrictive arrangement. These furnaces were blown out on October 1 as arranged. The Board of Trade returns for September were of a very encouraging tenor, the exports having reached £20,900,563, against £20,027,347 in September, 1880. Iron and ports having reached £20,900,563, against £20,027,347 in September, 1880. Iron and steel reached 376,517 tons, worth £2,562,268, as compared with 297,913 tons, worth £2,204,-285, in the same month of 1880. The average price of the iron rails was £5.15 9.44 per ton, and of the steel rails £6.11/3.44. These and other favorable figures all tended to strengthen the market, which was active in almost every section. Scotch warrants touched 53 6, Cleveland No. 3, 43, and ordinary hematites 61/ for No. 1. As the month grew older crude iron became quieter, algrew older crude iron became quieter, al-though the works everywhere were not less well engaged. In many departments, indeed, new orders were plentiful and buyers press-ing. The month ended without any change of importance, save the relative quietude just mentioned. The official return of Mr. Waterhouse for the September quarter showed the average selling price of all kinds of Cleveland iron to have been £5. 19. 6, which left wages unaltered. The return again showed the enormous preponderance of plate-

making in the North of England.

November opened with a slight suspicion of quiet in the open market, but with excellent advices from the Continent, the States, &c., as well as no diminution of occupation at the works. In Cleveland the stocks de ceru, but from the general want of confi-dence in "limited" ventures arising out of The showed a favorable development, the total exports amounting to £21,224,081, against £18,685,060. The iron and steel shipments £18,685,060. reached 386,658 tons, against 286,362 tons in October, 1880. Manufactured iron grew in October, 1880. a little quieter, and there was a slight diminuwas demonstrated by the dismissal of 400 ironworkers at Rhymney, owing to the increased attention paid to steel at that establishment. Some kinds of hardwares, including malleable nails, were again advanced plate, &c., were in free request, not a few f the manufacturers having an abundance f work for the remainder of the year.

of work for the remainder of the year.

December came in without excitement, but with many satisfactory features, there being few branches of the metallurgical industries at all indifferently engaged. Crude irons were, perhaps, the weakest, but they received a fillip from the large reduction (33,000 tons) made in Cleveland during November, and were also strengthened by the Board of Trade returns. These statistics showed the November exports to have been worth £20,713,164, against £18,864,700 in the same month of against £18,364,700 in the same month of 1880. The iron and steel shipments were 1880. The iron and steel shipments were 309,436 tons, valued at £2,296,306, against 269,464 tons and £2,060,424 in the same month last year. These and some collateral influences combined to send up prices of Pig, and Scotch warrants reached 53/4 at the close of the first entire week of the month, although Connal's Glasgow stores held 619,000 tons besides a further 238,000 tons estimated). although Connal's Glasgow stores held 619,000 tons, besides a further 338,000 tons (estimated) in makers' own yards, while the Cleveland total reserve was 393,000 tons, and that on West Coast about 53,000 tons. Finished iron was unchanged, with a fair general demand for bars, and a large output of sheets, galvanized fencing wire, hoops and plates, rolled metals advanced ½d. ½ B, and tinned hollow-wares underwent a reduction in discount of 2½ per cent., while tin plates grew stiffer, owing to dear sheet iron and the extremely high price of tin. A very strong call for hematites was reported, and the rail call for hematites was reported, and the rail mills were so full of work that makers mills were so full of work that makers declined to undertake new year deliveries. At Birmingham, Sheffield, Wolverhampton, &c., employment was brisk, and, as we know, still remains the same. Beyond this it is scarcely necessary to go with our review, inasmuch as it has been brought down to the period of current transactions. It may facilitate future reference, however, if it is placed on record that the year is closing under reasonably favorable conditions. There is plenty of work in all directions, and there are numerous inquiries for future deliveries. Profits are not in all cases extensive, indeed, in some instances they are meager—but it is generally believed that with the advent of the new year we may witness a further de-parture toward higher selling rates.

The Duration of English Iron Ores.

Of late years no question of a national and Of late years no question of a national and industrial character has received so much attention, or caused greater interest in England, than that relating to the probable duration of English coal fields. Equally important, probably, is the question as to how long some of the ironstone fields are likely to last. The two, indeed, are inseparably connected, and the decline of the one must be followed by a corresponding falling off in the other. and the decline of the one must be followed by a corresponding falling off in the other. Iron is the great lever which has raised England to the position it has so long enjoyed as one of the great manufacturing centers of the world, so that the falling off in the sup-plies of the raw material from which iron is produced or the fuel with which it is smelted, would be a most serious reatters restrant would be a most serious matter as regards English manufacturing and commercial pres-English stores of ironstone, large they are believed to be, are considerably below those of other countries, where the drain upon them is trifling in comparison. The history of the iron trade has shown that it has always flourished most in localities where there was a plentiful supply of fuel, and when that has been exhausted it has nigrated to other more favorable districts, where the necessary smelting material was more abundant. Thus Kent and Sussex, with the addition later on of the West Riding of Yorkshire, were the largest iron-producing places in the kingdom, the fuel used being supplied by the woods and forests, the terms "wald" or "weald" being given to a tract of country lying between the North and South Downs, and occupied by extensive forests. The ore used was that found in the Wealden rocks, and in the lower green sand of the cretaceous series, and the Romans have left undoubted proof of their having worked the thatings sands and clays for the ores of iron they contained, but these are now a sealed book to ironmasters; but some day their value may be recognized, when the present density distribute distribute contained.

and Sussex, and the smelting of ironstone with coal instead of wood, led to the iron trade traveling northward; but long after Dud Dudley had made iron with coal at his furnaces in Stafford-hire, having obtained a patent for that purpose from King James, which was to last for fourteen years. Dudley, as one of the advantages he claimed for his patent, said that it tended to the preservation of Great Britain's woods and til After leaving the Weald, the iron trade set-tled down in localities where there was plenty of coal as well as ore. The blackbands and the carbonates of the coal measures are those that were principally worked, along with some of the hematites, up to some thirty years ago, since which vast tracts of ore have been found under more recent for-mations, and are now being most extensively used, and will be more so. But the blackreceived by Sheffield and other houses. The ures; the blackband, 18 inches in thickness. tion of limiting the output, but arrived at no decision to that effect. April went out with the coal meanout special features to note.

May brought no change of importance, the iron market being dull, and the crude departments still depressed by the overproduction. Connal's held 549,751 tons at Glasgow, Cutlery.

FRIEDMANN & LAUTERJU



PEN AND POCKET CUTLERY, Solid Steel Scissors, Shears, Razors, &c.

"ELECTRIC RAZORS,"

And the "ELECTRIC SHEARS." Nickel Plated

Agents for the BENGALL RAZORS. AMERICAN TABLE CUTLERY, BUTCHER KNIVES, &c.
91 Chambers and 73 Reade Sts., N. Y.
423 N. Fifth St., ST. LOUIS, Mo.

Salesroom and Warehouse, 38 Chambers Street, New York City. Factories,

Superior Cutlery of all kinds and grades, from the finest in pearl and ivory handles to the lowest

Shelburne Falls, Mass.

BUTCHERS' and HUNTERS' KNIVES Are warranted to be equal in style, finish and quality, to any goods made in the world,

"COMPARE, THEN JUDGE." We are the sole owners of the Gardner Patent thuard and Rest for Carving Forks, and manufacture of fine carvers is with us a specialty.

MADE AMERICAN RAZORS OMBINATION - RAZOR STRO J. R. TORREY,

STROPS In all Styles.

To introduce we offer HOLLOW GROUND RAZORS at \$1.50

18H GEM RAZORS, \$1.75, \$7, \$2.50; Ivory, \$2. All our own make
the world. As Razor makers we know what is needed to sharpen a d Factories at WORCESTER. MASS.

JOHN WILSON'S CELEBRATED

TRADE MARK

PEPPERCORNS AND A DIAMONO.

CRANTED A D 1766 BY THE

AND PROTECTED BY ACT OF PARLIAMENT

RECISTERED ALSO AT

WASHINGTON U.S.A. ACCORDING TO ACT OF CONGRESS

ALSO AT LEIPZIG, IN

ACCORDANCE WITH THE GERMAN TRADE

BUTCHERS' KNIVES. BUTCHERS' STEELS, SHOE KNIVES.

I. R. TORREY RAZOR CO.,

It having come to the knowledge of JOHN WILSON that Counterfeit Butchers' Knives, purporting to be of his manufacture, are being sold in the United States, he hereby cautions all purchasers of his Knives and Steels to be on the alert against such imposition.

JOHN WILSON also hereby gives Notice, that it is his determination to institute Legal Proceedings against any person or persons who may be detected infringing his Trade Mark.

Every article of JOHN WILSON'S manufacture, bears the Trade Mark, in addition to the Name.

MARKS REGISTRATION ACT. WORKS:-SYCAMORE ST., SHEFFIELD, ENGLAND. Established 1750

PHŒNIX CASTER CO.,



Indianapolis, Ind.

Hibbard, Spencer & Co., Chicago, have sold our Casters as follows:

1879.....\$322.60 1880..... 590.92 1881 (year half out only)..... 823.54

We have just issued a new Catalogue, which we would be pleased to mail with terms upon application.

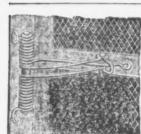
PHŒNIX CASTER CO.

Manufacturers,

INDIANAPOLIS, IND.







THE SHRODER DOOR SPRING

The BEST DOOR SPRING in the MARKET.

It will hold a door open as well as shut, and by its peculiar form has ir inches more leverage to hold a door shut, closing it tight, where all other Springs fail. No latch required with this Spring.

DELONG & SHRODER, Manufacturers, Warren, Illinois.

Correspondence solicited with jobbers and large dealers. We will

end a full-size Spring or a small model free, on application. Try it. REMOVAL.

wed from No. 295 THIRD AVENUE to No. 37 Warren Street, near Church St., J. M. FARRINGTON & CO.,

LOCKS, KNOBS, GONGS, BLANK KEYS, Wrought Store Door and Flush Bolts, Silver Plated, Ornamental Bronze and other Hardware.

Cuttery.



Joseph Rodgers & Sons

CELEBRATED CUTLERY, No. 82 Chambers Street, New York. P. & W. CLATWORTHY, Agents.

The demand for Joseph Rodgers & Sons' productions having considerably increased, they have, in order to meet it, greatly extended their Manufacturing Premises and Steam power.

To distinguish Articles of Joseph Rodgers

& Sons' Manufacture, please to see that they bear their Corporate Mark.

P. O. Box 3962. ESTABLISHED 1836.

Alfred Field & Co., COMMISSION MERCHANTS,

New York, Birmingham, Sheffield, Liverpool.

Guns and Pocket Cutlery SPECIALTIES.

Headquarters for 8. GOODS, WRIGHT'S ANVILS. UTCHER KNIVES, &C. LM'S POCKET CUIDE TO S, &c. TLERY AND RAZORS TAL POCKET KNIVES, LS AND RAZORS, LEBRATED RAZORS, WESTERN FILE CO. S FILES,
ENGLISH AND GERMAN GUNS,
ENGLISH AND GERMAN GUNS,
RÜBERT SORBY & SONS 'SHEE',
STUBS' FILES, WESTERN FILES,
GREAYES' SHEEP SHEARS,
CHESTERMAN'S TAPES,
GERMAN CUIL AND HALTERS and other CHAINS,
BRADES' TROWELS AND HOES,
CANASTOTA KNIFE CO.'S POCKET KNIVES.
Etc., Etc., Etc., Etc.,

Silver Medal, 1878—Paris.

All sorts of Hardware and Merchandise for import and export purchased on commission.



JOHN SPENCER & SON Albion Steel Works, Sheffield, MANUFACTURERS OF

FILES STEEL,

CORPORATE MARK

Granted 1749.

FURNESS, BANNISTER & CO., NEWARK, N. J.

CUTLERY

Patented Articles of Malleable Iron.

Hammer's Malleable Iron Oilers. Nos. 1, 2 & 3.



Hammer's Adjustable Clamps. Hammer's Mall. Iron Hand Lamps. Hammer's M. I. Hanging Lamps. NEW pattern Heavy Screw Clamps strongest in the market. For sale by all the principal Hardware Dealers Send for Price List.

Malleable Iron Castings of superior quality, and Hardware Spec Malleable Iron made to order.

HAMMER & CO., BRANFORD, CONN.

HAMMOND'S 42 Window Springs Lock and support upper and lot saches—all sizes. Are very convi ient, simple and durable. Sam to the Traite free. W. S. HAMMOND, Lewisberry, York Co., Pa. Circulars give rull instructions.

Cutlery.

McCOY & SANDERS, Hardware, Cutlery, &c., P. O. BOX 390, NEW YORK.

Sole Agents for

THEILE & QUACK'S CELEBRATED CUTLERY. WADE BROS.' AND TYLER & CO.'S CUTLERY. IRVING CUTLERY CO. ELMWOOD CUTLERY CO. SHEARS, MIDDLETOWN SHEAR CO WROUGHT IRON TACKLE BLOCKS. EADES' DIFFERENTIAL PULLEYS

PEUGEOT FRERES' FRENCH HORSE CLIPPERS SPECIALTIES.

SPECIALTIES,
WOSTENHOLM'S PCCKET CUTLERY AND RAZORS.
WADE & BUTCHER'S RAZORS,
BENGAL AND GENUINE HAMBURG HOLLOW
GHOUND RAZORS,
JUS, RODGERS & SONS CUTLERY,
GERMAN COIL AND HALTER CHAINS,
PLYERS, NIPPERS AND TOOLS,
CHESTERMAN'S TAPES.



Peugeot Freres' Horse Clipper

ROBERT SORBY & SONS. SHEFFIELD,

MANUFACTURERS OF THE CELEBRATED

Kangaroo Sheep Shears,



ALFRED FIELD & CO., 93 Chambers St., NEW YORK,

SOLE AGENTS. Send for price list and terms.

ESTABLISHED 1853.

E. E. EATON,

AMMUNITION,

Table Knives, Razors, Shovels, &c., &c., Fishing Tackle, CUTLERY,

> 53 State St., Chicago. MANN'S

Trolling Spoons



Sixty varieties manufactured, suitable for Troll-ng for all kinds of fish that will take an artificial air, and adapted for any lake or river in the

bait, and adapted for any lake or river in the United States.
Our Perfect Revolving Spoon is undoubtedly the best general Spoon for taking fish ever offered to the public.
Three sizes made—No. 20 for bass, pike, pickerel, or any fish under five pounds weight; No. 21 for large fish, and the best spoon ever made for salmon trout; No. 22 excellent for deep water fishing. Beware of imitations. None genuine except JOHN H. MANN'S name stamped on every spoon.
Sold wholesale and retail by the principal dealers in Fishing Tackle.

JOHN H. MANN & CO., SYRACUSE, N. Y.

20,000 Sold the Second Year. THE BEST ADJUSTABLE BAG HOLDER





the price, anywhere in the United States.

Just the thing for the Farmer, Thresher, Miller, the Feed Store (Grain, Potato, Guano and Phosphate dealers, Postmasters and Publishers, and to all others who use Sacks or Bags it is indispensable. A perfect and simple dovice, made of iron, and will last a life time. Sold by the Hardware trade everywhere. Orders solicited. The plat form is extra if wanted. Agents wanted everywhere. Address

GEORGE W. BRUCE, 1 Platt St., New York, Proprietor of the Atlantic Screw

Works, And Agent for the Florence Tack Co. and C. A. Maynard

Maynard's C. S. Planters'
Hilling and Bog Hoes
Brade's Crown, Planters' and
Hilling; Elwell's Weeding
Planters' and Grab, and J

PAT. DEC. 26.1874 Established in 1839. A. G. COES & CO WORCESTER, MASS., L. & A. G. Coes, Manufacturers of THE GENUINE COES Screw Wrenches. PATENTED,

> May 9, 1871. December 10, 1871.

December 28, 1875.

August 1, 1876.

The backstrain when the wrench is used is borne y the bar-not by the handle. The strongest Wrench made, and the only suo ssful Re-enforced Bar.

A. G. COES & CO...

Our Agents, GRAHAM & HAINES, 113 Chambers St., New York, carry a full line of our goods, and will be pleased to serve you at factory prices.

STANDARD GIRARD WRENCH.



Wrought Bar, Head

and Screw. Owing to the im-

creased demand for these justly Popular Wrenches. we are now manufacturing more than

any other establish

ment in the world. Our Wrench having been imitated by other manufactur ers, we have adopt ed the above Trade Mark, and will here

SEND FOR TERMS and PRICES

after stamp all our

GIRARD WRENCH MFG. CO., Girard, Pa.

LAMBERSON'S PRICE BOOKS.

Full Leather, \$7.50. Half Leather, \$6.50. Pocket Edition, Full Leather, \$3.50. DISCOUN'T Bolt List, \$1.50. Screw List, 50 cents, Revised April 27, 1881. Leigh's Discount Book, \$1.00. Revised April 27, 1681.
Leigh's Discount Book, \$1.00.
Address all orders to Pope & Stevens, General
gents, 114 Chambers Street, N. Y.
For sale at publisher's index, it W. P. D. C. C. or saie at publisher's prices by Wm. Blair & Co., loago; A. F. Shaplelch and Cantrell Hardware Co., Louis C. B. James Detroit.

GEO. H. CREED, SHIP CHANDLERY,

103 Reade Stmet, New York. Manufacturers of and Wholesale Dealers in Cotton and "Long Flax" Sail Buck, Cotton and Linen Ravens, Creed's Patent Ships' Ciews. Heitman's Wire Rope Splicers. Agent for Raymond's American Crane Oil for lubricating Cylinders and Valves.

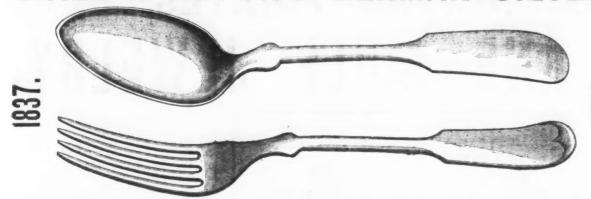
CHAS. E. LITTLE,

59 Fulton St., New York, Pump-Log and Tubing Augers and Fittings,

And Agent for Barnes' Wood-Working Machinery and Lathes.

Clements' Steam Band Saw. Kimball's Foot-Power Band Saw.

HALL & ELTON'S GERMAN SILVER.



In addition to Spoons of this well-known brand, we are now prepared to furnish Forks of the same quality. We GUARANTEE these goods to be SOLID and of UNIFORM quality throughout, with no coatings to wear through or flake off, and with no liability to RUST.

HALL, ELTON & CO., Wallingford, Conn., and 75 Chambers St., New York.

HOLMES, BOOTH & HAYDENS,

Finest Quality Silver-Plated Spoons, Forks, Knives, &c.



NOTICE.—We guarantee the base of our Spoons, Forks, &c., to be full 18 per cent. Nickel Silver, and extra heavily plated with pure Silver. Our goods are all hand burnished, and are first-class in every respect. We pack our Spoons and Forks one dozen in each box.

49 CHAMBERS ST., NEW YORK.

Factories, WATERBURY, CONN.

18 FEDERAL ST., BOSTON.

Escutcheon Pins, Small Rivets and Screws,

And Specialties in this line made to order by BLAKE & JOHNSON, WATERBURY, CONN.

THE STANDARD WOOD TRACK

HANGER

AMERICA.

For Sale by the Wholesale Trade Generally, or the

KIDDER SLIDE DOOR HANGER CO.

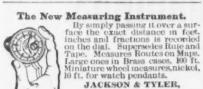
Sole Manufacturers,

ROMEO, MICHIGAN.



KIDDE







THE BUCKEYE

Baltimore, Md.

Hand Drill Presses. Both hand and Self-Feed. Simple in Construction, Efficient in'Work, and at much lower price han any other Drills made. Send to us for circulars and prices. For sale by the rade. Address

The FOLGER MF'GCO.





FLAGLER, FORSYTH & BRADLEY, Agents, 298 Broadway, New York. NOVELTY IRON FOUNDRY.

HAIGHT & CLARK, 16 & 18 De Witt St., Albany, N. Y. FINE GRAY IRON CASTINGS OF EVERY DESCRIPTION.

Rosettes and Pickets for Wire Workers, Castings for Furniture and Piane Manufacturers. Iron and Metal Patterns of all kinds a Specialty. Correspondence solicited for all kinds of castings,

plainly shows that the field is getting ex- hours it was found that the unprotected boiler

is worked in connection with the coal measures, and being most carefully selected, produces a good quality of iron. The ironstone is worked in connection with the coal measures, and being most carefully selected, produces a good quality of iron. The ironstone found in connection with the coal has not only been greatly drawn upon, but it has in most localities been found to be unprofitable owing to its thinness. Even in South Wales, where in the lower measures the iron is found, as at Merthyr Tydvil and Taff Vale, it is only about 5 inches in thickness, so that a good deal of stone is imported from other districts, more especially Northamptonshire, while what hematite is raised in Cornwall and Devon is also sent to the iron works in South Wales. In Scotland the black band ironstone is met with in the carboniferous limestone is met with in the carboniferous limestone soils, and is about 16 inches in thickness, and soils, and is about 16 inches in thickness, and in some localities it is found to pass into the coal measures. What is known as the uppermost band is about 16 inches thick, but is now nearly all worked out. Indeed, in all English coal-mining districts but little iron is now being worked, owing to its thinness, inferiority in metallic iron and cost of raising, so that it may well be left out in the question of the duration of our iron refields. question of the duration of our iron ore fields, seeing that it could not pay to work such thin beds after the coal was got out. In the Silurian and Devonian systems hematites are found, more particularly in Devonshire and Cornwall, but are not likely to be taken into consideration in forming an estimate as to how long the largest ironstone fields will last. It is different, however, as regards the hema-tites of Cumberland and Lancashire, which are both being industriously worked. They are found in the carboniferous or mountain limestone and are most valuable, but they are somewhat limited in area, so that there would not be much difficulty in calculating how long they are likely to last at the present rate of production. It is, therefore, evident that the greatest dependence as to the future must be placed on the fields of iron ore that have been discovered within little more than thirty years from the present time, and these consist of Cleveland, Northamptonshire and Lincolnshire, and the new field about to be developed in the county of Rutland. As to the former, which produces nearly one-half of the ore raised in the kingdom, its life will be a telephyle or one and will last larger.

iron.

Taking the quantity of available coal in Durham and Newcastle at 7,000,000,000 tons, it may fairly be assumed that the ironstone would amount to upward of 15,000,000,000 tons. The coal, according to the present rate of increase, would not last much more than 200 years, while the ironstone, at the existing rate of production, would not be finished at the end of 700 years. When the coal is exhausted there will not be much inducement for the works to be carried on ducement for the works to be carried on where they are now. Supplies of coal, how-ever, may be brought from a distance to take the place of what was previously supplied close at hand. The Northamptonshire field is a most extensive and an almost inexhaust-able one, traversing, as it does, a large por-tion of the county, commencing on the Midland system near to Market Harborough, and proceeding on to the town of Northampton, and from there to Blisworth and Weedon and beyond for several miles. It is also found to the east of the Midland at Thrapgenerally under 1 foot. On the other hand, the Cleveland stone is of considerable thickness, while in Northamptonshire, where most of the ore is raised quite close to the surface, there are two beds, the top one being 12 feet thick, separated by 10 or 15 feet of an ocherous substance from the lower one, which is 20 feet thick. In Lincolnshire some of the stone is upward of 18 feet in thickness, and the beds traverse a large area of ground from Frodinham to Lincoln and beyond, and a good deal of the ore is sent to Staffordshire, and the West Riding of York-Staffordshire, and the West Riding of York-shire, and Derbyshire. It will be seen that the vast stores of ironstone now being raised the oolitics are those that will have to be the resort of nearly all English ironmasters in no distant future, as it is evident that the stone of the coal measures is fast dying out by exhaustion and unprofitableness in working. seams of it will last; but there is no doubt they will last longer than the beds of coal which are necessary for the smelting of them, that the exhaustion of the coal fields will in all probability lead to the termination of the manufacture of iron on anything like a large

known that silk is an excellent non-conductor of heat, and some recent experiments in Germany would seem to indicate that it might pay to encase boilers in this costly material. In one trial three boilers of the same size and make were ranged in order, one covered with the ordinary felt, another with a coating of silk only five-eighths of the thickness of the felt, while the third was left altogether uncovered. They were all filled with water having a temperature of 100° C., and examined at intervals. After a lapse of three examined at intervals. After a lapse of three fractions.

scale, unless it can be made without coal.

plainly shows that the field is getting exhausted and is unprofitable to work. In Derbyshire, some twenty years ago, upward of 400,000 tons of stone were raised. Yet last year not one-half of that quantity was mined.

In the Bradford and Leeds districts the ore is worked in connection with the coal measure and being next carefully selected, pro-

Inte:-State Commerce.

Among the important measures which will be early presented for the consideration of Congress is the Inter-State Commerce Bill, which bears the name of Mr. Reagan, of Texas. Mr. Reagan says that he became a member of this Congress chiefly for the purpose of urging his bill relating to this sub-ect. He has already reintroduced his Inter-State Commerce Bill, and its counterpart has been introduced in the Senate by Mr. Coke, Texas. The fundamental provisions of Mr. Reagan's bill are, first, that the constitutional interpretation of "commerce" includes inter-State traffic, and that while freights and passengers transported within the State are solely under the control of the laws passed by State Legislatures, freights, passengers, &c., which are received in one passengers, etc., which are received in one State to be delivered in another, are subject to regulations prescribed by Congress. The bill is long and explicit as to the manner in which the authority over inter-State traffic, which it asserts exists in Congress, should be

Committee on Commerce are known to be favorable to the bill, it is sure to encounter strong opposition. Judge Reagan gives his personal views as follows: "The provisions of the bill are about the same as those in the bill reported to the last Congress, with the of the ore raised in the kingdom, its life will be a tolerably long one, and will last longer than the coal in the districts contiguous to and with which it is smelted. Mr. I. Lowthian Bell, a very high authority on the iron and coal trades of Cleveland and Durham, in evidence given before the Select Committee on Coal, said he had made a calculation that it would take the whole of the coal of the counties of Northumberland and Durham to smelt the ironstone in the Cleveland hills—that is, supposing all were used for making ple and more agreeable. The qui tam actions and the criminal proceedings will have to be in the Federal courts, and there is added to this section a requirement that the district attorneys of the United States shall prosecute the qui tum actions either upon their motion or upon the affidavit of respectable citizens. I am very anxious to get the bill considered by the present Congress, and regard it as alto-gether the most important measure before gether the most important measure before Congress, and I regard it further as assured that if the railroad men were wise they would not oppose it, because it is altogether conservative in its character, simply looking to the protection of the interests of the people by restraining the undue exercise of the monopoly powers of these corporations, and in no way interferes with the just management of these roads. That is the truth about the bill. There has been much effort used to show the contrary, but my judgment is that if the opponents of the bill prevent reasonable legislation of this kind the time will come when they may expect legislation and beyond for several miles. It is also found to the east of the Midland at Thrapstone, and other places on the London and Northwestern, and from there runs on to the county of Rutland. Already the ironmasters of Derbyshire, Notts, and in some parts of the West Riding, receive vast quantities of stone from Northamptonshire, so that but little of the local stone is used in making iron. Lincolnshire, the most recently discovered ironstone field, now supplies several of the coal districts where ironstone was formerly extensively worked, but now only on a small stone field, now supplies several of the could districts where ironstone was formerly extensively worked, but now only on a small scale. It will be seen that the ironstone formerly worked so largely in most coal-mining localities for the furnaces near at hand are now not thought of, being, as a rule, rather inferior in quality, and very thin, generally under I foot. On the other hand, the Cleveland stone is of considerable thick—arts of the Union of the land, larts of the land, larts of the Union of the l

Prevention of Overwinding .- The prevention of accidents in mines and collieries arising from what is known as "overwind-ing," has from time to time received a great deal of attention from colliery managers and engineers. A new process for this purpose engineers. A new process for this purpose was brought into operation some time ago at With the increasing consumption of stone, it was brought into operation some time ago as the Lingdale mines, near Guisboro', England. The apparatus there in use is one designed and patented by Messrs. Charles I. Anson, Son & Co., of Darlington, and is upon the principle of admitting steam automatically to a powerful steam brake, and at the same time cutting it off from the engine cylinders, by the release of a lock which is struck by cale, unless it can be made without coal.

Covering Bollers with Silk.—It is well nown that silk is an excellent non-conductor

THE "TERROR" AMONG THE "PIRATES." COVERT'S HORSE AND MULE JEWELRY.



CONSISTING OF

Covert's Celebrated Harness Snaps, Swivel Snaps, Open Eye Bit and Chain Snaps, Snap and Thimble for Horse and Cattle Ties.

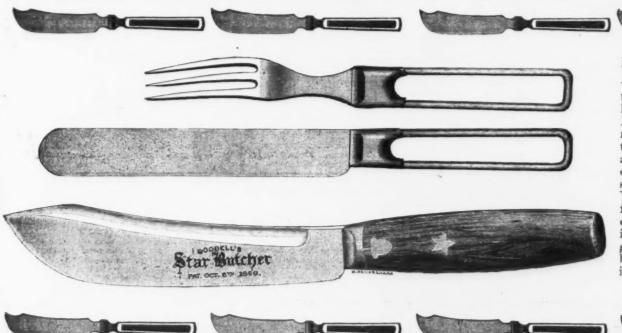
Rope Goods, consisting of Rope Halters, Horse and Cattle Ties, Halter Leads, Driving Reins, Weight Cords, Hitching

Cords, Lariat-tethers and Picket Pins. Also, Leather Horse Ties, Breast Chains, Halter Chains,

Martingale Chains, Rein Chains, Post Chains, Post Rods, &c.

For sale by all leading jobbers in general and saddlery hardware, and the same discounts given from the list to the trade as when purchased direct from the factory. For illustrated catalogue and price list address,

COVERT MANUFACTURING CO., Sole Manufacturers, West Troy, N. Y.



We have invented a new style of Knife Handle, and applied for a patent on same. It is light, exceedingly strong, and can never get loose. We have plated this knife with a composition plate, and we warrant it to wear as long as the VERY BEST silver plate, and to look as well after two months' use. The price is so extremely low that the poor need scour knives no longer. We have for three years warranted our Butcher Knives to be superior to any other Butcher Knives on earth, and this warrantee has never been disputed to our knowledge by anybody who has ever tried them, and our statement about these knives will prove equally reliable. We will send 12 knives and 12 forks by mail, postpaid, on receipt of \$3. We make a very handsome Butter Knife, heavily plated with silver, at an exceedingly low price. We also make a full line of Hot Water Proof Table Cutlery, which has very rapidly gained in popularity for the past three years, and is having an unprecedented sale at the present time. We make eleven different styles of Carvers. The cutting quality of the blade is the same as that of our Butcher Knives. The fork guard is patented by us, and made by nobody else, and is highly admired by the trade. We are having a large sale now, but we desire to increase it. Give us a chance to prove our statements.

GOODELL COMPANY, Antrim, N. H.

DROP PRESSES.

The Peck Patent Drop Press is the most simple, durable and efficient HAMMER made, both for Stamping Sheet Metals and for forging, and takes less power than any other.

P. Q. Address:
Box 122,
NEW HAVEN, CONN.

BEECHER & PECK,



DROP FORGINGS.

Our Forging Department is fitted out with the latest first-class Tools, and we are now prepared to quote figures on anything in the drop forging line, doing nothing but firstclass work.

Works:

Cor. Llovd and River Streets, GRAPEVINE POINT.

t]

Phi

th

Ar to sta

tion low

We h Challen are plea

besid

meltin

DE-OXYDIZED BRONZE.

DE-OXYDIZED BRONZE (patented) is an alloy of LAKE COPPER and best ASIATIC TIN in any proportion required, so as to be either as ductile as copper, as tough as iron, or as hard as steel, according to the proportion of Copper and Tin used.

The process of making the alloy is what constitutes its superiority over any other known alloy of Copper and Tin or any other Bronze composition. The castings made from this metal, owing to its perfect fluidity when melted, possess great density, perfect soundness and homogeneity. Unlike certain bronze and other compositions, it can be handled without the least difficulty by any ordinary founder, as it flows like oil in pouring.

Thus the necessity and trouble of shipping patterns, the delay in receiving castings and the expense of the double charges of freight or express, such as attend the obtaining, in many cases, of Phosphor Bronze, are entirely avoided by ordering D. O. B. in ingots. Where this metal has superseded other compositions of similar character, it has endured three times as long. In a word, we claim that De-Oxydized Bronze not only has none of the objectionable features attributed to similar compositions, but that it possesses all their good qualities in addition to its own merits, and advantages peculiar to itself, such as the following summary will make clear:

- 1. ITS CREAT CONVENIENCE IN HANDLING as compared to Phosphor Bronze.
- 2. We claim for it SUPERIOR ANTI-FRICTION QUALITIES to any other known Brass or Bronze.
- 3. CREAT MALLEABILITY AND TENACITY.
- 4. Its homogeneousness and smoothness of surface render it capable of the HICHEST POLISH.
- 5. As before mentioned, we claim for it UNEQUALED ENDURANCE.
- 6. We claim that JOURNALS MADE of D. O. B. REQUIRE ONE-FOURTH LESS LUBRICAT-INC MATERIAL than any other composition yet known.

Finally, this metal has never failed to give more than satisfaction wherever used. To sustain our statements, the following testimonials will suffice:

Henry Disston & Sons, Saw, Tool, Steel and File Works, Front and Laurel Streets, you continue to make it the same quality, we shall use no other metal in our Engine Boxes. We therefore take pleasure in recommending it to Engine Builders in general.

Philadelphia Smelling Company, City:

Yours respectfully,

HOFF, FONTAINE & ABBOTT.

Gentlemen: After a trial of eighteen months of your "De-Oxydized Bronze" as Journal Boxes in our Rolling Mill, where great pressure is required we take pleasure in recommending it as being superior to any we have heretofore used. "Very truly,

HENRY DISSTON & SONS.

Gentlemen: After a trial of eighteen months of your "De-Oxydized Bronze" as Journal Boxes in our Office of Union Brass Manufacturing Company, Chicago, Dec. 23, 1880.

Philadelphia Smelling Company, Limited, Twelfth and Noble Streets, Philadelphia, Pa.:

Office of Eagle 1ron Works, 1162 North Third Street,

Dear Sirs: In reply to your inquiry of yesterday as to our opinion of 'De-Oxydized Bronze' for Railway
Coach Trimmings, I beg to submit that we have used it up to present writing for the trimming of something
over 100 coaches. One marked peculiarity of this metal, when highly finished, is non-liabilit to abrasion, and
over 100 coaches. One marked peculiarity of this metal, when highly finished, is non-liabilit to abrasion, and
its non-affinity with the gases of the atmosphere, which in embossed work is a great desi fera un. To those
willing to pay more in the first cost, we would confidently recommend "De-Oxydized Bronze" Trimmings as
cheaper in the end.

Yours very truly,

J. HALL DOW, President.

This metal is used for the following purposes, and we can refer to large concerns in addition to above, through the New England and Middle and Western States, who are using it in preference to any other.

- 1. Engine, Car and Machinery Journals.
- 2. Pumps, Valves and Linings, Cylinders, Pinions, Cogs, Plungers, Crank Pins, &c.
- 3. Car Trimmings, Harness and Coach Furniture, House Hardware, Steam Fittings, &c.
- 4. Wire, Sheets, Rods and Tubes.

And for any other purpose that a handsome, durable and sound Bronze is required. We especially commend it to Railroad Companies, Car Builders, Machinists, Engineers and others requiring a Journal Metal that will stand the severest friction and the heaviest pressure.

Manufactured and for sale in Ingots and Castings by the

PHILADELPHIA SMELTING COMPANY, Limited,

S. E. COR. TWELFTH AND NOBLE STS., PHILADELPHIA, PA., U. S. A.

GENUINE

Our Genuine Babbitt is superior to all other makes in the market in every particular. We guarantee it to be perfect in its Anti-triation qualities in machinery AT A SPEED OF 10,000 PER MINUTE, or at 1000 TONS PRESSURE for 10 YEARS. We append below testimonials from A1 houses justifying us in the above claims.

We have used your "Genuine Babbitt" about 4 years on our wood cutting machinery bearings, run at a speed of 9800 revolutions per minute, and al ways with entire satisfaction.

See W. INGALLS & CO.

New Haven, Conn., April 11, 1381, We have used your "Genuine Babbitt" in our Challenge Rock Breaker with excellent results, and are pleased to testify to its merits for Journals,

Workester, Mass., April 23, 1881.

Having used your "Genuine Babbitt Metal" for over 4 years on machinery that runs over 9000 turns a minute, on r in. shaft, 3 in. journals, 1 can safely recommend it for all you advertise it to do. Any person wishing to see the machinery or wanting further information can call or address,

A. I. THOMPSON, Master Mechanic, 25 Hermon street.

From J. L. Marsden, Supt., Anson, Ang. 17, 1880

From J. L. Marsden, Supt., Anson, Ang. 17, 1880

From J. L. Marsden, Supt., Anson, Ang. 17, 1880

From Withers, Rugo & Richardson, Manufacturers of Wood-Working Machiner, Workester, Mass., Nov. 23, 1885.

The "Genuine Babbitt" we have bought from you give perfect satisfaction in our Stone Breakers. We have it working in bearings 12 in. long and 5 in. diameter. One half the revolution of shaft there is a pressure of 900 tons. The other half 2/5 tons. The shaft makes from 20 to 250 turns per minute. I think this is a very severe test, yet they have been running for more than one year.

From this it will be seen that it can have no superior, or even equal, as an Anti-Friction Metal in anything manufactured. We make besides all grades of Anti-Friction Metals,

Letter A, Guaranteed at a speed of 2000. Letter D, Used for Shafting.

Letter B, Guaranteed at a speed of 1000. Letter E, Used for Ag'l Implements' &c.

Letter C, Guaranteed at a speed of 800. Letter A L, For slow speed.

All our Metals are made from best Lake Copper, Asiatic Tin, Cookson's Antimony and best Refined Lead, and in all cases run free at melting heat, without drossing, and without any necessity for heating the journals into which they are poured.

MANUFACTURERS' AND MACHINISTS' NAME PLATES, REAL BRONZE, FINISHED.

Patterns from \$3 upwards, according to Size and Style. Plates, \$3 per dozen and upward, according to Size and Style. SKETCHES FURNISHED FOR APPROVAL BEFORE MAKING PATTERNS.

We have a specialty in this line and produce a handsomer plate, at less money, than can be obtained elsewhere. ART AND ECCLESIASTICAL METAL WORK IN BRASS AND BRONZE, GAS FIXTURES, ALTAR CANDLESTICKS, SANCTUARY LAMPS, CHANCEL RAILS, PULPITS, &c.

PHILADELPHIA SMELTING COMPANY, Limited,

S. E. COR. TWELFTH AND NOBLE STREETS, PHILADELPHIA. PA.

Coke and Coke Crushing.

The strip of territory in Western Pennsylvania called the Connellsville Coke Regions, while well known as to situation and product while well known as to situation and product among Pittsburghers, and also to coke consumers all over the United States, is not as familiar to the former as might be supposed from their comparative proximity to it. The vein of coking coal, which is the treasure of the region, underlies a narrow tract of land averaging 6 miles wide and 40 miles long, on which are situated the numerous cake works. which are situated the numerous coke works, the product of which finds its way from Lake Champlain to Omaha and Salt Lake, and from Canada to Texas. These coke works, which in 1860 comprised a few hundred ovens, have increased in number and size very rapidly within the last few years, as may be seen by reference from time to time to our "Industrial Items," and now number at least 6000 ovens, with probably 3000 more contracted for. These ovens employ a small army of men about them, day and night, while a larger number are kept constantly at work bringing the coal from the mines. The annual output of coke from the region is estiannual output of coke from the region is estimated at 140,000,000 bushels, of 40 pounds each, representing, at the average price for last year, a money value of \$5,000,000. To this region went, on the 16th of last month, a large party of business men from Pittsburgh and vicinity. The most of these had to that date only a theoretical knowledge of the extent and character of these regions, and some of them hardly that; and the object and some of them hardly that; and the object of their journey was to make the coke coun-try less a creation of fancy and more a practry less a creation of fancy and more a practical reality. There were also those who had attained considerable familiarity with the region, and, of course, there were those who were directly engaged in the industry.

The objective point was the Standard Coke Works of the Messrs. Hutchinson, at Mt. Pleasant, Westmoreland County, and the execution was originated and successfully con-

Pleasant, Westmoreland County, and the expedition was originated and successfully conducted by these gentlemen. At eleven o'clock a. m. the party arrived at the works, and, under the lead of their hosts, made as minute an inspection of the works as their great extent and the limited hours at command would permit. The impossibility of inspecting the works, even in a whole day, will be apparent when it is known that the proprietors of the Standard Works own 2000 acres of coal, the vein of which is 9 feet thick; that there are 600 ovens in all, 375 of which are completed and in blast, and that the entire works when in operation 375 of which are completed and in blast, and that the entire works when in operation afford employment for 500 men. For the purpose of raising coal from the mines there is a "slope" which has an inclination of about 29, up which the coal is hauled by a powerful stationary engine. The distance from the top of the slope to the floor of the mines is 600 feet. In addition to the "slope," or incline, there is a perpendicular shaft which is 200 feet in depth. The steam power at both places is supplied by double batteries. which is 200 feet in depth. The steam power at both places is supplied by double batteries of boilers, so that in case of one battery getting out of order the other can be called immediately into requisition.

There is every convenience for raising the coal, charging the ovens and shipping the coke. Wherever either coke or coal has to be transported there are railroad tracks so that the

Wherever either coke or coal has to be transported there are railroad tracks, so that the transference of either from place to place is attended with little difficulty. The ovens are not charged in the old-fashioned style. There is a railroad track laid along the tops of the ovens, on which "larries," or iron cars, filled with the coal are hauled by locomotives expressly built for the purpose, and are dumped directly into the ovens. The Messrs, Hutchinson have also a further process of manipulation, by which the coke is Messrs. Hutchinson have also a further pro-cess of manipulation, by which the coke is crushed or cut into suitable sizes for domestic and other purposes. A few rods from the mouth of the "slope," and in close proximity to the oven range or terrace, is located what is called the "coke crushers," an irregular, uncouth and shapeless structure, but well adapted to the purpose for which it has been erected. In this, by the use of revolving cylinder, furnished with knives or teeth and screens, the coke is cut and assorted into four cymaer, turnshed with kinves of every and screens, the coke is cut and assorted into four different sizes, and thereby rendered more convenient for use. By the process of cutting, the coke is freed from dirt and impurities of every kind. After going through these works, and inspecting the new tenement houses, large store and other buildings of the company, the visitors partook of an excellent dinner at the hotel, and were then borne back to the smoky city on their special train.

The Moniteur des Intérêts Matériels (Brussels, November 27) states that the Société Cockerill has secured a second order from the Orléans Railway Company for 15 locomotives and tenders, to be delivered in 1883. It is said that the works are fully engaged up to that time. The contract for the metal work for the approaching Madrid Exhibition has been secured by M. Rolin, of Brain-le-Comte.

Special Notices.

For Sale.

The Tyler Hoe and Tool Works, located at Ironton, Lawrence County, Ohio. This property is well adapted for manufacturing hoes, picks, mattocks, &c.; is in good repair, and can be started immediately. Iron, steel and fuel of best quality can be obtained at a minimum cost. Shipping facilities, both rail and water, are unexcelled. Will be sold at a reasonable figure and upon easy terms. Address upon easy terms. Address
upon easy terms. Address
B. M. CALDWELL, Secretary,
Ironton, Ohio.

WM. H. MULLER & CO.,

Dusseldorf, Germany.
NEW YORE. BILBAO,
LONDON. CARTAGENA, SPAIN,

New York, Jan. 1, 1882.

New York, Jan. 1, 1882.

Sir: We hereby beg to inform you that we have this day established an office in New York for the importation of Iron Ore, Pig Iron, Spiegeleissen, Ferromanganese, &c., and that we have entrusted Mr. Aug. Quack with the management.

Soliciting a share of your patronage, we are, sir, yours respectfully.

WM. H. MULLER & CO.

FOR SALE-ENGINES & BOILERS. FOR SALE—ENGINES & BOILERS.

One 9 x 12 Engine and Boiler complete, good as new, \$700; one 8½ x 12 Engine, with governor, pump and heater, \$275; one 8 x 12 Engine, with governor, pamp and heater, \$250; one 8 x 12 Engine, with governor, \$200; one 5 x 5 semi-portable upright Engine and boiler, new, \$400; one 6 x 6 upright Engine, with governor, \$200. All kinds wood and iron-working machinery, new and secondand, at 48 Nerwin Street, Cleveland, Ohio. FOREST CITY MACHINERY DEPOT.

Special Notices. SECOND-HAND & NEW MACHINERY

December 27, 1881.

The following New and Improved Machinists' Tools

The following New and Improved Machinists' Tools are part of what we have for early delivery:

12-in. swing, 13\(\frac{1}{2}\) t. bed, Engine Lathe. January.

31\(\frac{1}{2}\) i. in. swing, 16\(\frac{1}{2}\) t. bed, Engine Lathe. January.

31\(\frac{1}{2}\) i. in. swing, 8ft. bed, Engine Lathes. January.

21\(\frac{1}{2}\) i. in. swing, 6ft. bed, Engine Lathes. January.

22\(\frac{1}{2}\) i. in. swing, 0ft. bed, Engine Lathes. January.

7\(\frac{1}{2}\) i. in. swing, 17\(\frac{1}{2}\) t. bed Engine Lathes. New.

11\(\frac{1}{2}\) ii. swing, 16ft. bed, Engine Lathes. New.

11\(\frac{1}{2}\) iii. swing, 16ft. bed, Engine Lathes. New.

21\(\frac{1}{2}\) iii. swing, 7ft. bed, Engine Lathes. New.

11\(\frac{1}{2}\) iii. swing, 7ft. bed, Engine Lathe. Second-hand.

12\(\frac{1}{2}\) iii. swing, 7ft. bed, Engine Lathe. Second-hand.

10\(\frac{1}{2}\) iii. swing, 6ft. bed, Engine Lathe. Second-hand.

10\(\frac{1}{2}\) iii. swing, 6ft. bed, Engine Lathe.

12\(\frac{1}{2}\) iii. swing, 6ft. bed, Engine Lathe.

13\(\frac{1}{2}\) iii. swing, 6ft. bed, Engine Lathe.

15\(\frac{1}{2}\) iii. swing, 17\(\frac{1}{2}\) bed, Engine Lathe.

15\(\frac{1}{2}\) iii. swing, 6ft. bed, Engine Lathe.

15\(\frac{1}{2}\) iii. swing, 17\(\frac{1}{2}\) bed, Engine Lathe.

15\(\frac{1}{2}\) iii. swing, 6ft. bed, Hand Lathe. Second-hand.

12\(\frac{1}{2}\) iii. swing, 6ft. bed, Hand Lathe. New.

10\(\frac{1}{2}\) iii. swing, 6ft. bed, Hand Lathe. New.

Some Arbot Fox Lathe.

1 Iron Placer, 54 in. wide, 24 ft. long, with two heads, ad-hand.

1 5-in. x 56 in. x 9 ft. Betts Planer. New.

1 15-in. Rends Safars New.

2 14 in. Rends Safars New.

1 21-in. Rends Safars New.

1 21-in. Rends Safars New.

2 14 in. Wheel Borer. Nearly new.

2 14-in. Harris Upright Drills. New.

2 14-in. Harris Upright Drills. Second-Rand.

2 13-Spindle Drill. New.

1 38-in. Car Wheel Borer. Nearly new.

2 14-in. Harris Upright Drills. Second-Rand.

2 13-Spindle Drill. New.

1 3-Spindle Drill. New.

2 18-in. Second-hand. So and 72 in.

2 13-Spindle Drill. New.

2 18-in. Second-hand.

2 18-in. Second-hand.

2 18-in. Second-hand.

3 18-in. Second-hand.

4 18-in. Second-hand.

4 19-in. Second-hand.

4 19-in. Second-hand.

5 19-in. Second-hand.

1 2 19-in. Second-hand.

1 2 19-in. Second-hand.

1 2 19-in. Second-hand.

2 19-in. Second-hand.

3 19-in. Second-hand.

4 19-in. Horizontal Centering Machines. New.

2 18-in. Horizontal Centering Machines.

2 19-in. Second-hand.

2 19-in. Second-hand.

3 19-in. Second-hand.

4 19-in. Horizontal Centering Machines. New.

2 19-in. Second-hand.

3 19-in. Second-hand.

4 19-in. Horizontal Centering Machines.

4 19-in. Horizontal Centering Machines.

2 19-in. Second-hand.

3 19-in. Second-hand.

4 19-in. Second-hand.

5 19-in. New. With Taps and Dios.

1 19-in. Second-hand.

2 19-in. New. With Taps and Dios.

1 19-in. New. Second-hand.

2 19-in. New. Second-hand.

3 19-in. Second-hand.

4 19-in. Second-hand.

5 19-in. Second-hand.

6 19-in. Second-hand.

1 19-in. Second-hand.

2 19-in. Second-hand.

3 19-in. Second-hand.

4 19-in. Second-hand.

5 19-in. Second-hand.

6 19-in. Second-hand.

1 2 19-in. Second-hand.

2 19-in. Second-hand.

3 19-in. Second-hand.

4 19-in. Second-hand.

5 19-in. Second-hand.

6 19-in. Second-hand.

9 19-in. Second-hand.

1 19-in. Second-hand.

1 19-in. Second-hand.

2 19-in. Second-hand.

3 19-in. Second-hand.

4 19-in. Second-hand.

5 19-in. Second-hand.

5 19-in. Second-hand.

6 19-in. Second-hand.

6 19-in. Second-hand.

6

The Geo. Place Machinery Agency, 121 Chambers and 103 Reade Sts.,

NEW YORK.

IRON RAILS.

THE SPRINGFIELD IRON COMPANY

is open for orders for a few thousand tons of Iron Rails, of any weight not less than 30 lbs. per yard and for immediate delivery.

Apply to the Company at Springfield, Illinois

JAMES JOHNSTON, Agent,

30 Pine Street, New York.

HARDWARE.-WANTED

purchaser for a wholesale Hardware House al-ready established, and doing an excellent business, strusted in the city of clindinatt. The business as a whole or a controlling interest, can be obtained. The Frest Southern Railroad, leading into the heart of he South and Texas, opons up such an extensive ceritory that the business can be enlarged as capital and desire may dictate. A satisfactory showing can be made to any parties wishing to consider the pur-hase. Address, Office of The Iron Age, Cincinnati. O.

LEIGH'S DISCOUNT BOOK

Specially arranged for the use of the HARD-WARE TRADE. Acknowledged by all the best work of the kind ever published. Just what is needed when taking stock.

Price by mail, One Dollar.
Address

St. Louis Elevator, St. Louis, Mo.

NOTICE.

TO THE HARDWARE TRADE, Retail and Wholesale.

Before buying, send to me for quotations

A. W. WHEELER,

141 Lake St., Chicago.

REDUCTION IN PRICE. JENNINGS' DISCOUNT TABLES.

Currency may be sent by mail at publishers' risk.
Address. S. H. JENNINGS, Deep River, Conn.

Wanted.

A Steel Roller for 12-in. mill—one who can roll squares, flats, and hand and guide rounds. Must be a first-class workman, and strictly temperate. Address with full particulars of experience and

Office of The Iron Age, 83 Reade St., N. Y.

Partner Wanted.

In a well-established Hardware business. Capital required, \$4000 to \$5000; yearly sales, \$40,000; stock from \$10,000 to \$12,000; good profits; managed by a practical hardware man. Address LUDWIG & CO., Buena Vista, Colorado.

WANTED.—Position in Hardware or Cutlery House by competent party, either in stock or as traveler; to years' experience in trade; thoroughly posted acquainted with details, &c., and capable of managing.

Address, GOTHAM, Office of The Iron Age, 36 Clark st., Chicago.

Special Notices.

Second-Hand and New Machinery.

The following Tools ready for delivery at an The Coloring Tools and the Coloring Tools and

One 11 in. x 5 ft. Foot Lathe. New.

IN STOBES.

Three Lathes, 22 in. x 12 ft. New.
Four Lathes, 18 in. x 8 ft. New.
One Lathe, 17 in. x 8 ft. Lincoln.
Two Lathes, 16 in. x 6 ft. Wood & Light.
One Lathes, 16 in. x 6 ft. Wood & Light.
One Lathes, 14 in. x 4 ft 6 in.
Cne Planer, 30 in. x 8 ft.
One Crank Planer, 12 in. stroke.
One Milling Machine. No. 4. Wood & Light.
One large Index Milling Machine.
One No. 12 Bolt Cutter. New.
One Burleigh Rock Drill, No. 4. New.
One Rowles Pump, No. 7.
One Cameron Fump, No. 7.
One Cameron Fump, No. 7.
One Peck, Stow & Wilcox Foot Press.
One 16 cit. Daniels Planing Machine.
One pair Paper Rolls.
One Pick Company Machine.
One pair Paper Rolls.
One Pick Cathes Machine.

ENGINES AND BOILERS. IN STORE.

ENGINES AND BOILERS. ENGINES AND BULLERS,
One Horizontal Engine, 9 in. x 16 in. New.
One Corliss Beam Condensing Engine, 500 H. P.
One Portable Engine, 9 in. x 10 in.
One Horizontal Engine, 3 in. x 6 in.
Two Hor. Tub. Boilers, 4½ x 13½, 43 4-in. tubes.
One Hor. Tub. Boilers, 4x x 13½, 43 4-in. tubes.
One Locomotive Steel Boiler, 25 h. p. One Locomotive Steel Boiler, 25 One Roots Engine. Shafting, Pulleys, Hangers, &c.

J. Gray's Machinery Depot, 37 Dey St., N. Y.

For Sale.

The Little Schuylkill Rolling Mill,

at Milldale, Schuylkill County, Pa., near Port Clinton, on the line of the Philadelphia and Reading Railroad, consisting of a Merchant Bar Mill in complete running order, with a splendid water power sufficient to run the mill two-thirds of the year. Engines, Boilers, Foundry and Machine Shop, with Lathe for turning rolls, and all other appurtenances necessary to commence operation at once. Together with dwellings, stables and large tract of land, to be sold low if applied for soon. For further particulars address or apply to
J. O. RICHARDSON,

No. 232 Dock street, Philadelphia.

Palo Alto Rolling Mills,

For Sale.

Near Pottsville, Pa.,

On the Main Line of the Pottsville and Reading Railroad.

These mills are in good repair, and can be started in two days' time.
Rolls for T-Rails 12 to 70 lbs. per yard, and for Street Rails 13 to 70 lbs. per yard.
Guide Mill Train for Merchant Iron ½ to 1 inch. Rolls for Merchant Bar, round and square, up to 4½ inches.
Number of Puddling Furnaces in both mills, 30; Heating Furnaces, 0; all with boilers attached.
Also, Foundry, Machine Shop, Blacksmith Shops, Iron House, Roll House, Carpenter and Pattern Shops, Stables, Handsome Dwelling for superintendent, 1: Tenement Houses, a Brick Office, and ample grounds for stock and cinder.
For further particulars address

Messrs. LEE & McCAMANT, Extrs., Pottsville, Pa.

THOS. F. WRIGHT, 1804 Race st., Philadelphia, Pa, HUGH W. ADAMS, 56 Pine st., New York.

For Sale.

Stock of hardware, stoves and implements, and tore furniture, in one of the best towns in Kansas HARDWARE,

Box 366, Salina, Kansas,

For Sale.

The largest stock of New and Second-hand Engines, Boilers, and general Machinery in the West, Send for Catalogue. Hoisting Outfits for Coal Mining and other purposes a specialty.

WARREN SPRINGER,

195 to 219 South Canal St., Chicago

For Sale.

Complete stock of Hardware in a thriving town of 30,000 inhabitants.

Office of The Iron Age, Builders' Ex., Cincinnati, O.

For Sale.

A 3500-lb Fair Ventilator Tops, Inquire Fairbanks Platform Scale, and some 53 GOLD STREET, N. Y. City.

Wanted.

A situation in the Hardware business, where there is a prospect of getting on the road as trav-

elling salesman. Address

Office of The Iron Age, 83 Reade St., New York

Wanted.

A situation as traveling salesman. Have had some experience in the Hardware business, and can sell goods on the road. Will travel either for a moderate salary, or on commission, Address FRANKLIN, Office of The Iron Age, 83 Reade St., New York.

Wanted.

A few hundred yards of light Railroad Iron-about 20-lb. Rail. R. N. & H. VALENTINE, Woodbridge, N. J.

WANTED.—A young man wants a position in a first-class Hardware house as traveling salesman. Has had nine and a half years' experience in the General Hardware business. Best of references.

P. O. Box 79, Lewistown, Pa.

WANTED.—A position as Manager or Foundry-man of an Anthracite or Coke Furnace, or Superintendent of Mine. Thoroughly practical in both branches, having been raised in the business. Best references as to capacity and character. Address

P. S. GEIGER, Weverton, Wash. Co., Md,

Special Notices.

Bolt, Nut and Washer Machinery For Sale.

Six 1½-in. double-head Bolt Cutters with automatic stop, and powerfully geared, and particularly adapted to cutting Track Bolts or large quantities of Bolts of various sizes.

Four ½-in. double-head Bolt Cutters, the same as are used in all large bolt factories.

Two 2-spindle and One 6-spindle Nut Tappers.

Two No. 2 Washer Machines for making all washers to 3½ in.

One No. 1 Washer Machine for washers up to 2 in. Bolt Size.

Two Bolt Headers with latest and best improvements for all bolts to 1 in. Strongest heads and largest variety of any machine in use.

One No. 1 Nut Machines for 1½ in. Nuts, hexagon or square. on or square. Two No. 2 Nut Machines for No. 1 Nuts, and all nder. Two No. 3 Nut Machines for ½ in. Nuts, and all maller; 2000 lbs. of ¾ in. Nuts made per day.

YORK & SMITH,

Cleveland, Ohio.

NOTICE.

The Kingston Charcoal and Iron Company, Limited,

of Kingston, Ontario, expect in a few weeks to commence the manufacture of charcoal (by the Matthieu process) of good quality, and in large quantities, and they hereby solicit correspondence with large consumers of the same, with a view to opening up a business with them.

J. S. MUCKLESTON,

Secretary and Treasurer. KINGSTUN, ONT., Dec. 24, 1881.

For Sale, to Close an Estate.

The property of Hon. H. D. Foster, deceased, consisting of about 300 acres of land at Harmerville, West Pennsylvania R. R. (mouth of Deer Creek, on Allegheny River) 12 miles from Pittsburgh. Eligible for extensive manufacturing purposes, with railroad frontage both North and South of R. R. Station, giving an extent for parallel sidings of over one quarter of a mile. Proved to be all underlaid by Hite's station coal veins at a depth of about 100 feet below level of railroat. Will be divided to suit.

F. Y. CLOPPER, Administrator, Greensburg, Pa.

For Sale.

Hardware Stock and Business. Located in one of the best towns of Northeastern Pennsylvania. Stock clean and well assorted, suited to the requirements of the traile where located. Business of 30 years' standing. For terms and full particulars analysis located. Business of a spely to terms and full particulars apply to JAMES S. KUHN, Towarda, Pa.

For Sale.

Foundry and Machine Shop.

Large assortment of Patterns. Business estab lished in 1824. For terms and full particulars apply to C. VAN BRUNT, 121 Chambers street, New York.

NOTICE.

To Manufacturers.

THE CLEVELAND NON-CONDUCTING CO., makers and dealers in all kinds of Bolier and Pipe Coverings, Asbestos, Hair Felting, Cement and Sectional Coverings. Send for prices.

19 South Water st., Cleveland, Ohio.

For sale or rent-Rolling Mill and Forge; 30 niles from New York on canal and railroad. Ad-

BOX 77. Morristown, New Jersey.

PUNCHING PRESS AND SHEAR FOR SALE.—A Bollermaker's Punching Machine, 24 Inch throat, punching 34 hole in 34 Iron. Also a Power Shear; will ng 34-hole in 34-tron. Also a Power Shear; will plate-tron 54 inches in width. Weight, 5000. PEERLESS PUNCH AND SHEAR CO., 115 crty Street, New York.

The Undersigned

Have this day formed a copartnership under the firm name of Hotchkiss & Nichols (successors to Henry G. Nichols) for the transaction of a general commission business in fron Nalls, &c. EDWIN O. HOTCHKISS,

HENRY M. NICHOLS, New York, January 3, 1882. 14 Platt Street

Wanted.

Traveling salesman experienced in General Hardware. Only those experienced and willing to work need apply.

Address, giving age, experience, reference and salary expected. THOS. CREAMER, Richmond, Ind.

For Sale.

Stock of Hardware, Stoves and Tinware; value about \$7000; located in county seat town in North-ern Michigan, terminus of railroad. Reason for elling, poor health.

GEO. McCLELLAND, Caro, Mich.

Wanted.

Either a partner with \$1500 or party to buy out a Stove, Housefurnishing and Crockery Store for \$1500. Stock worth \$4500. Want of capital, reason for selling out. Business is paying and is in a prosperous locality in New York City.

Address,

408 East 79th st.

A Machinist and Draughtsman,

experienced in shop and office, with moderate capital, desires an active interest in a substantial L. DUVINAGE.

547 Lafayette ave., Brooklyn, N. Y.

DRILL PRESS FOR SALE—A new Upright Power Drith Press, awings at inches, back geared, quick neutral motion, sees suited and haft, superior finish; weight, coo; hight, of feet price of the present of the

Special Notices.

JOB LOT. **ELEY BROTHERS'** GENUINE BLUE CARTRIDGE CASES,

Twelve Gauge.

The best paper shell in the market. For sale cheap. Supply limited.

ALFRED FIELD & CO., 93 Chambers St., N. Y.

For Sale.

One 20-inch Engine, one 100-horse Locomotive Boiler; two large Pulleys, 30-inch face; a 20-inch Rubber Belt, &c. All in good order, and will be sold for less than value to make room for larger. Can be seen running at AKRON RUBBER WORKS, Akron, Ohio.

Wanted.

A party with \$5000 to \$10,000 (payable in installments, it desired), to take an interest in a sew Hardware and Novelty Manufacturing Company, controlling specialties that will yield large profits, and attend to financial duties.

Address
Office of The Iron Age, 220 S. 4th St., Phila., Pa.

Blast Furnace For Sale.

One of the very best roperties in the state of Pennsylvania, including farm of 125 acres, considerable portion of which is Ore Land. Cap acity, 275 tons Fig Iron per week. For full particulars apply to

J. O. RICHARDSON, No. 232 Dock St., Phiadelphia.

Copartnership Dissolution.

NOTICE is hereby given that by the death of the unitor partner, Mr. Rathan Authony, the firm of BRADECRE and State of the Gran with the day dissolved.

The affairs of the firm will be the under signed, the sole surviving partner with the signed of the control of the manual signed. The area of the control of the control

MARTIN L. BRADFORD.

Boston, June 12, 1881.
All communications in regard to the affairs of the late firm should be addressed to.

BRADFORD & ANTHONY, Boston, Mass.

MARTIN L. BRADFORD hereby gives notice that be will continue his business under the name of "BRADFORD & ANTHONY."

The estate of the late Nathan Anthon s to be in no-way interested in the future business, whether con-ducted under the name of Bradford & Anthony or otherwise.

ducted lineer see name of Branch of The Sherman Process Co.

9 Pemberton Square, Boston, Mass., Issue Licenses to use the Process for the Manufacture of Iron and Steel

In the Bessemer Converter, Crucible, Siemens-Martin, Puddling, Blast and Cupola Furnaces. The use of this Process improves the quality of the product, saves fuel and labor, and does not re-quire any change in furnace or manner of working See page 17 of The Iron Age of Oct. 25th, 1877.

For Sale.

SECOND-HAND DROPS AND LIFTERS BEECHER & PECK,

Lock Box 122, New Haven, Conn. For Sale.

GREAT BUSINESS OPPORTUNITY. Two Corliss Condensing

Beam Engines, 32 in. x 72 in. cylinders. Address,
THE HARTFORD ENGINEERING CO.,
Hartford, Conn.

For Sale.

One 18x30-in. Horizontal Engine. Two Locomotive Bollers, 80 and 75 H. P. each. One four-ton "Otis" Freight Elevator. One No. 5 Knowles. Steam Pump, second-hand, but all in good order, complete, ready for immediate delivery. Will be sold low. For particulars address.

BELCHER & BAGNALL, 40 Cortlandt St., N. Y.

For Sale.

Stock of Hardware, Fixtures, and Good Will of the subscribers, in the city of Norwich, Conn.

Only one other hardware store. Population

FULLER & PARISH For Sale.

A well-selected stock of Hardware in a thriving county seat in Pennsylvania. Stock all first-class, but not large. For particulars address PENNSYLVANIA.

Office of The Iron Age, 83 Reade St., New York. FOR SALE LOW.-ENGINE.

A Vertical High-Pressure Steam Engine, com plete. Cylinder, 24 in. by 48 in. Built by A. J. Sweeney & Son. Can be seen in daily use at our nail factory.

LA BELLE IRON WORKS,

Wheeling, West Va. BUSINESS CHANCE.

A first-class Retail Hardware Store in the vicin ity of New York City for sale on reasonable terms. One who desires to acquire a business can be employed fow a month or two to get ac-quainted with the entire place.

Address

P. O. Box 892, N. Y

E. BISSELL & CO., Wholesale Hardware Auctioneers. 83 Chambers and 65 Reade Sts., N. Y.
Sales held weekly for the trade. Consignments solicited. We refer to the leading Manufacturers and importers.

Sanderson Bros. Steel Co.

Forty shares for sale at a discount.

EDWARD FRITH & SON,

s. Poeri street, New Yor &

Far stock

the languare busin the a encer Off

Cutil dress eren

A

Special Notices:

Second-Hand & New Machinists' Tools. JANUARY 3, 1882.
One Car Axie Lathe. Hewes & Phillips. New.
One Hor. Boring Lathe, 52 in. x 13 ft. L. W. Pond. In

One Hor. Boring Lathe, \$2 in. x 12 ft. La W. Pond. In good order.
One Engine Lathe, \$6 in. x 15 ft. A torder.
One Engine Lathe, \$6 in. x 15 ft. A with Haven.
One Engine Lathe, \$8 in. x 16 ft. Fifield. New.
One Engine Lathe, \$8 in. x 16 ft. Fifield. New.
One Engine Lathe, \$4 in. x 12 ft. Fifield. New.
One Engine Lathe, \$2 in. x 12 ft. Ames. New.
One Engine Lathe, \$2 in. x 14 ft. Fifield. New.
One Engine Lathe, \$2 in. x 14 ft. Fifield. New.
One Engine Lathe, \$2 in. x 14 ft. Fifield. New.
One Engine Lathe, \$2 in. x 16 ft.
One Engine Lathe, \$1 in. x 10 ft.
One Engine Lathe, \$1 in.

New.
Engine Lathe, 18 in. x 8 ft. Michael. Good order.
Engine Lathe, 18 in. x 8 ft. Lathe & Morse.
Good order.
Engine Lathe, 16 in. x 676 ft. Bridgeport Mch.
Tool Works New.
Engine Lathes, 16 in. x 6 ft., 7 ft. & 8 ft. Ames. New.

One Engine Lathe, 16 in. x 6% ft. Bridgeport Mch.

Six Engine Lathes, 16 in. x 6 ft., 7 ft. & 8 ft. Ames. New.
One One Lathes, 16 in. x 6 ft., 7 ft. & 8 ft. Ames. New.
One Engine Lathes, 16 in. x 6 ft.
One Engine Lathe, 18 in. x 6 ft. Fratt & Whitney.
One Engine Lathe, 18 in. x 6 ft. Fratt & Whitney.
One Engine Lathes, 14 in. x 6 ft. Star tool Co. New
One Engine Lathes, 14 in. x 6 ft. Star tool Co. New
One Engine Lathes, 14 in. x 6 ft. Hand. New.
One Engine Lathes, 13 in. x 6 ft. Hand. New.
One Engine Lathes, 13 in. x 6 ft. Ames. New.
One Engine Lathes, 13 in. x 6 ft.
One Hand Lathes, 17 in. x 2 ft.
One Hand Lathes, 17 in. x 2 ft.
One Hand Lathes, 17 in. x 4 ft.
One Flaner, 18 in. x 4 ft.
One Flaner, 18 in. x 4 ft.
One Flaner, 18 in. x 2 ft.
One Flaner, 18 in. x 2 ft.
One Crank Flaner, 19 in. stroke Shaper.
One Crank Flaner, 19 in. stroke Shaper.
One Crank Flaner, 19 in. stroke Shaper.
One 1 in. Stroke Shaper.
One 2 in. Hendey Shaper.
One 2 in. Upright Drill.
One 2 in. Upright Drill.
New.
One 2 in. Upright Drill.

New.
One 24 in. Upright Drill. Ames. New.
One 30 in. Upright Drill. Prentice. New.
One 36 in. Upright Drill. Prentice. New.
Three Sensitive Drills.
One Lincoln Milter. Pratt & Whitney. No-2.
Forty Lincoln Milters and Vices. Good order.
One No. 3 Garvin Hand willer. New.
One 100 lb. Steam Hammer. Sweet.
One 10 in. X 30 in. Dudgeon Steam Hammer.
One 250 lb. Steam Hammer. Ferris & Miles.
One 250 lb. Steam Hammer. At.

E. D. Rill I ADD. 14 D. . C. A.

E. P. BULLARD, 14 Dey St., New York, Akron Iron Co.'s Hot Polished Shafting.

To Railroads, Mill Owners and Contractors.

STRUCTURAL IRON WORK FOR SALE.

Having purchased the Ironwork of the Main Centennial Building, situated in Fairmount Park, Philadelphia, we now offer the same in sections to seit purchasers. These buildings can be sold in widths varying iron 100 to 68 feet, and of any hight, from 40 feet down to 25 feet, and in length from 100 to 00 feet. We have eight Spiral Stairways, in all over 800 steps.

Plans showing how all parts of these buildings may be utilized in railroad depots, &c., have been prepared by Messrs. Wison Bros. & Co., of Philadelphia, civil engineers and architects, and can be seen at the office of Mackintosh, Hemphili & Co., limited, Fort Pits Foundry, Pittsburgh, Pa., or at the office of the company, at Centennial Building, West Philadelphia.

Wishing to dispose of the above quickly, we are prepared to offer great inducements to purchasers, both as to low price of material and promptness of delivery. Any communications addressed to the CENTENNIAL STRUCTURAL CO., care of Mackintosh, Hemphili & Co., Limited, will receive prompt attention.

SPECIAL NOTICE.

THIS SEASON'S STOCK OF

WHITE HOLLY

IS NOW READY. AS TO WHITENESS, IT IS

UNSURPASSABLE.

J. RAYNER,

BAND AND VENEER SAW MILLS,

Foot Houston St., E. R., N. Y.

Wanted.

A Roll Turner for Guide and Hoop Iron.

Must be thoroughly competent. References required. State salary expected.

Address.

Office of The Iron Age, 83 Reade st., New York.

W ANTED.—Two Hardware Clerks, single men, shipping and store clerks. Must be well posted in General Hardware. Address, stating age, experience, salary and references.

Office of The Iron Age, 8, Beade St., New York.

Wanted.

A salesman familiar with the Hardware and Cutlery business, to trade in Pennsylvania. Address, giving experience, salary required and reforences, CUTLERY,
Office of The Iron Age. 83 Reade St., New York.

Wanted.

A young man as entry clerk and to assist on the books; must be a rapid writer and correct at figures. A person familiar with the Hardware business preferred. Address in handwriting of the applicant, stating salary required and references,

Office of The Iron Age, 83 Reade St., New York.

Farm to Exchange for Machinery.

200 acres good land, good house, barn, granaries, wagon house, wagon shed, 90 fruit trees, vineyard, stock, crops and lot of improved machinery and tools. Address

66 908,75

Office of The Iron Age, 200 S. 4th St., Phila., Pa.

Trade Report.

Office of The Iron Age, Wednesday Evening, Jan. 4, 1882.

The improvement noticed in Wall street markets early in the week, following closely on a period of depression, led many to anticipate a boom after the turn of the year, but such expectations have not been realized. Values had declined and a large short interest been created, but by Friday afternoon the latter had been partially closed out, making another bear raid possible, and the opportunity was not allowed to pass unimproved. The active money market, natural to the close of the year, and the severe cutting of rates for railway transportation from the West (which were lower than ever before), favored the demonstration. The consequence was a weak market on Saturday and Tuesday, much to the surprise of the street generally. The decline on Tuesday ranged anywhere from 2 to 3 per cent., the falling off being most noticeable in the Trunk Line shares, Denver, the Wabashes and other Southwesterns. It was reasoned that corporations, no more than individuals, can afford to do business at a loss, and that the continuance of the "rail-road war" augers poorly for future dividends. According to the Chicago Tribune, the Vanderbilt road and the Grand Trunk last week took grain and provisions as low as 10¢ P 100 b between Chicago and New York. To-day the stock market opened under increased depression, with considerable orders to sell, but in the last hours there was a marked reaction and prices advanced 11/2 for Lake Shore to 112 %, and 1/8 @ 1/8 for the remainder of the list. Call loans fell to plain 6 %.

In commercial circles the general situation of business is considered healthy, aside from the speculative tendencies which pervade many departments. Fortunately we can except from this latter indictment the industrial and manufacturing branches, respecting which there are no signs of lessened activity in any direction.

This afternoon extended 31/4 % bonds included in the 105th and 106th calls were presented to the Treasury for redemption to the amount of \$1,368,005, making the total presented for redemption to-day \$1,449,005 United States bonds were strong through most of the week.

The leading drawers of foreign exchange lower than at the close of last year.

State stocks were dull and irregular into effect on the 29th ult. through most of the week, but for the last day or two have been unusually active.

of late has somewhat improved.

The bank return for the week shows a loss of \$291,400 in reserve, which now stands at \$1,251,900 above, against \$2,727,775 above at this time last year. The loans show a gain of \$1,979,300.

The importations of specie and bullion at this port during the week ending December 30 were \$153,682, consisting of \$114.749 in gold, and \$38,933 in silver, as against a total of \$2,637,411 for the week ending December 31 last year. The importations since the 1st of January and since the 1st of August compare as follows with the movement during the corresponding periods last year;

| \$69,094,256
5,656,836 |
|--|
| \$74,751,092
August 1
1880,
\$67,119,889
2,462,330 |
| \$69,582,219
were strong,
ose yesterday |
| |

Since January 1-

for the extended bonds; as follows:

| | U. S. 4%'s 1891 registered 11436 | Asked |
|----|----------------------------------|---------|
| | U. S. 412 a 1801 coupon 11436 | 3745 |
| | | 81750 |
| L. | U. S. 4's 1907 registered | 117% |
| | | Acres . |
| | U. S. Currency 68 1896 | |
| - | U. S. Currency 68 1807 127 | |
| | U. S. Currency 68 1898 | |
| | U. S. Currency 68 1899 129 | |
| | Sixes continued10034 | 101% |
| | Fives continued 103 | 808% |

The following is an analysis of the bank

| | Dec. 24. | Dec. 31. | | |
|-------------------------|-------------------------|---------------|------|-------------|
| Loans | 313,404,100 | \$315,443,400 | Inc. | \$1,979,300 |
| Specie | 57,300,100 | 57.762,500 | Inc. | 302,400 |
| Legal t'd'rs | 10,015,300 | 16,942,000 | Dec. | 73,300 |
| Tot.reserve | 73,495,400 | 73,724,500 | Inc. | 319,100 |
| Deposits
Reserve re- | 287,448,400 | 289,890,400 | Inc. | 2,443,000 |
| quired | 71,852,100
1,543,300 | 72,472,600 | | 610,500 |
| Oirculation. | 20,125,803 | 20, 162, 400 | | 36,600 |
| | MINING | STOCKS | | |

The following were the closing quotations for mining stocks: American Flag.....

| п | Chimico | | |
|---|-----------------------|------|------|
| ı | Alice | | 75 |
| | Alta Mont | | 1.05 |
| 1 | Bechtel | 30 | |
| ١ | Bulwer xd | 2.75 | 2.00 |
| i | Bull Dom | 40 | |
| ı | Boulder | 0 | |
| ı | Big Pittsburgh | | 95 |
| J | Bradshaw | 55 | 60 |
| 1 | Calaveras | 6 | |
| 1 | Caledonia | 95 | |
| 1 | California | | 35 |
| 1 | Climax | 21 | |
| ł | Consolidated Imperial | 3 | |
| į | Consolidated Virginia | | .00 |
| I | Chrysolite 4 | .05 | 1.25 |
| İ | Cent. Ariz | | 1-45 |
| ł | Cherokee | 35 | |
| I | Dunderberg | | 7.5 |
| 1 | Dankin | 30 | 3.6 |
| | | | |

| | Eureka C | | 14.00 |
|-----|----------------|-------|-------|
| | Findley | 24 | |
| | F. De Smet | | 7.25 |
| | G. Placer | | 37 |
| | Granville | 2 | **** |
| 1 | Goodshaw | 20 | 30 |
| | Great Eastern | | 8 |
| 1 | Green Mountain | 2.05 | |
| - 1 | Gold Str | 17 | 18 |
| - 1 | Hukill | 60 | 05 |
| | Horn Silver | | 17.00 |
| 1 | Hibernia | 25 | 28 |
| | Hortense | 13 | 17 |
| . 1 | fron Silver | 3.00 | 2.10 |
| | Lacrosse | 24 | **** |
| d | Little Pitts | 1.50 | 1.60 |
| 1 | L. Chief | 75 | 85 |
| 1 | Mariposa | | 2.80 |
| | Mar. Pref | | 3.50 |
| | Moose | | 1.07 |
| 1 | Miner Boy | 8 | . 0 |
| 1 | Navajo | 30 | 35 |
| | Nor. Belle | 7.87% | 1111 |
| | Ori, and Mil | 36 | 37 |
| | Rappah'k | 17 | |
| . | Robinson | 2 25 | 9.30 |
| 1 | R. Sun | | 75 |
| | Red Eleph | 300 | |
| П | S. Nevada | 8.00 | 0.00 |
| 1 | Silver Cliff | 2.55 | 2.60 |
| | Sutro | 95 | 1.00 |
| | Spr'g Val | | 5.00 |
| 3 | S. Hiten | 9 | |
| | St. Line No. 1 | | 15 |
| - | St. L. No. 4 | 35 | 39 |
| 1 | St. L. 1 and 4 | 25 | 27 |
| | St. L. 2 and 3 | 1.55 | 8.60 |
| | Union Con | 13 | |
| | Unadilla | | 12 |
| | Vizina | 2.80 | 2.85 |
| | | | |
| | | | |

GENERAL HARDWARE.

The demand for General Hardware has holiday season, and the volume of business transpiring is unusually large for the first week in the year. The tendency of values is | 900 different styles, and in fancy goods about still upward and the tone of the market is

Nails are in fair request, and prices have gained strength during the week. We quote on a firm market, 10d. to 60d., \$3.30 @ \$3.40, net, according to quantity.

We have received the following notice of the action of the American Vise and Tool Association at their late meeting. The regular discount quoted by the trade for Picks, Mattocks, Grub Hoes and Coopers' Froes is 30 per cent. from list, and the cash discount 2 per cent. instead of 3 per cent., as formerly.

Office of
American Vise and Tool Association,
101 and 101 Duane Street,
New York, Dec. 27, 1881.

At a meeting of the above association, held on this date, it was decided to advance prices in conformity with the present prices of labor and material. Prices may be obtained upon application to any member of the association.

The former cash discount has been abolished. HERMAN FUNKE, Pros.

E. L. MAXWELL, Sec. The American Table Cutlery Manufacturers' Association have made the following changes in prices: All Scale-tang and Solid advanced their posted rates on Friday to Wood Handle Table and Deserts advance 506 \$4.81 for 60-day and \$4.85 for sight, at per gross. "Association Butchers," 6 inch. which they remain, with actual rates slightly listed at \$1 and \$1.35, advance to \$1.15 lower than at the close of last year.

The manufacturers of Wrought Brase Butts have advanced the price to discount The exports of domestic produce from this 65 per cent. and 10 per cent. extra for cash port for the week ending last night amount in 30 days. P. & F. Corbin's prices for their to \$6,395,000. The tenor of foreign advices various styles of Wrought Brass Butts are as

| 112 | D | 23 | Dis. per cent |
|---------|--------|------------------|--|
| Wrought | DIBES | Butte, | usual finish |
| ** | 0.0 | 00 | whitened5 |
| S.c | 4.6 | 15.6. | whitened and polished ne |
| 44 | 64 | ** | nickel plated or bronzed, |
| Wrought | to a f | Piano-
urther | er Butts, No. co. 335
Nos. 9, 19 & 29, 335
forte Hinges. 6
discount of 10 per cent. to 8. |

Durrie & McCarty, Nos. 97 Chambers and 81 Reade streets, have been appointed sole agents for Mallett & Co.'s "Improved Bouble Action Clutch Screw Drivers," which for each ¼ inch of extra merise, they quote at the following list, less discount 25 per cent. We print on page 28, a description, with illustration, of this very convenient tool, to which we invite the attention of the

| In | 16 | 0 | h | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - | Ī | 2 | 21 | | d | 0 | 2 |
|----|----|---|---|---|---|---|---|---|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---|---|---|----|---|---|---|---|---|---|---|---|-----|----|----|----|-----|---|
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | | , | | | | | | | | | | | | | | | | s | 7 | . 1 | 3 |
| K | | | | 0 | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | - | 8 | | O |
| 6 | | | | | | 0 | | | | | | | | | | | | | | 0 | | | | 0 | | | | | | | | | | | | | | | | | | | | | 0 | . 1 | 0 |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | , | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 | 2 | | 7 |
| | | V | V | | 3 | - | h | 8 | L' | V | 6 | 1 | r | 9 | e | • | - | 1 | V | e | Ó | l | ŧ | h | e | | Í | C | ol | 1 | 0 | Ŋ | N. | i | 1 | ļ | g | c | C | N | 1 | 1.1 | 11 | li | a) | n | i |

IMPROVED DOUBLE ACTION CLUTCH SCREW DRIVERS

cations.

New York, Jan. 3, 1882.

Editor of the Iron Age.—Dear Sir: I desire to inform you of my new departure and change of base. Having relinquished the position which I have held for nearly fourteen years past with E. Remington & Sons, I have assumed the management, as its president, of the Greenfield Tool Co., Greenfield, Mass., whose entire product, consisting of Table Cutlery, Mechanics' Tools, Ox Shoes, &c., will be sold by Alford, Ward & Davenport, 85 Chambers street, New York, where I shall make my headquarters; and, as will naturally be supposed, I shall

totals of this week compared with that of last week:

Dec. 24. Dec. 31. Comparison.

Loans...... 533,464,100 \$315,443,400 lnc. \$1,979,300 \$firm will also include the manufacturers' agencies of several specialties in Hardware.

Loans..... 53,90,100 \$7,762,500 lnc. \$23,400 leegal t'd'rs 10,015,300 16,942,000 Dec. 73,300 Yours very truly, A. ALFORD

> NEW YORK EVENING POST BUILDING, Jan. 4, 1882. To the Editor of The Iron Age .- DEAR SIR

To the Editor of The Iron Age.—Dear Sir:
Having concluded my engagement with
Messrs. Sargent & Co., with whom I have
had the pleasure to be connected for 11 years,
I would ask the privilege of your valuable
columns to announce to my friends in the
Hardware trade, my establishment at this
address (No. 206 Broadway) for the practice
of my profession. Any business intrusted to
me will be appreciated, and will receive
thorough and earnest attention. Faithfully
yours.

WINTHROP PARKER. yours, Winthrop Parker,
Attorney and Counsellor at Law. L. Jeff Sprengle, Ashland, Ohio, manufac-

The manufacturers of Augers and Bits and Chisels and Drawing Knives, held their regu lar monthly meetings in this city to-day. Existing prices were confirmed.

We invite the attention of the trade to the advertisement of the Medford Fancy Goods Co., No. 96 Duane street, which appears on the 30th page. This company make a specialty of Dog Collars and kindred goods, and the assortment they present is worthy the notice of buyers. Among their newest designs in Collars are those made of Celluloid in assorted colors; they are exclusive makers of these goods and say of them : "The characteristics of the Celluloid Dog and Cat Collars are their great strength and pliability, almost beyond belief, the amount of tensile strength they possess, yet as perfectly pliable as leather. Their mountings, which consist of nickel plated trimmings, and the beautiful and various designs in which the Celluloid is en graved, make them really the marvel of the day in goods of this class. They are also made plain; they cannot be affected in any way whatsoever by the change of tempera ture, while the colors are perfectly indellible. They are also made in imitation of ivory, coral, tortoise shell, and can be washed whenever they become soiled.' In Leather and Chain Collars they present uffered little, if any, abatement during the a very large assortment suitable for dogs and cats of every age and breed. In what is known as regular goods they manufacture 600. Their present catalogue being entirely inadequate to present a fair idea of the extent and variety of their goods, they have in preparation a larger and more comprehensive book, which they expect to issue next month.

Some of the leading manufacturers of Pulley Blocks have adopted a revised and uniform price list, as shown by the following:
At a recent meeting held in Boston, the

undersigned, representing three of our largest manufacturers of Pulley Blocks, agreed that on and after January 5, 1882, they would adopt and use the following revised and uni-form price lists for Tackle Blocks, the same to be subject to a discount of 35 per cent, to the trade. It is expected that other names will be added next week. All former lists and discounts from us are hereby made null and void. Price lists in book form will be mailed to our customers as soon as published.

BAGNALL & LOUD, Boston; Frank Baldwin, New York Agents.
DETROIT BLOCK WORKS, Detroit; Graham &

Haines, New York Agents.
Penfield Block Co., Lockport; Henry B. Newhall, New York Agent.

Dated Lockport, December 31, 1881. ROPE STRAPPED BLOCKS. With Hook and Thimble-Lignumvitæ or Iron Sheaves.

| L'gth of blocks. | For rope, diam. | Single iron,
bushed. | Double iron,
bushed. | Triple iron,
bushed. | Single roller,
bushed. | Double roller,
bushed. | Triple roller,
bushed. | |
|------------------|-----------------|-------------------------|-------------------------|-------------------------|---------------------------|---------------------------|---------------------------|--|
| Inch. | Inch. | Each | Each | Each | Each | Each | Each | |
| 3 | 5-16 | \$0.60 | \$1.10 | \$1.60 | \$1.00 | \$1.90 | \$2.70 | |
| 352 | 76 | .70 | 1.25 | 1.65 | 8.101 | 1.95 | 2.80 | |
| 4 | 1/6 i | .75 | | | 1.15 | 2.10 | 3.00 | |
| 5 | 56 | ,90 | | 2.00 | | | 3.50 | |
| 6 | 24 | 8.05 | 1.90 | 2.40 | 8.65 | 3.00 | 4.00 | |
| 7 | 79 ; | 1.25 | | 2.75 | 1.90 | 3.50 | 4.75 | |
| 6 (| 1 | 1.60 | 2.75 | 3.00 | | 4.00 | 5.50 | |
| 9 | 1 | 2.00 | 3.25 | 4.40 | | 4.75 | 6.50 | |
| 10 | 136 | 2.40 | 3-75 | 5.40 | 3.25 | 6.00 | 8.50 | |
| 11 | 156 | 3.00 | 5.00 | 7.00 | 4.00 | 7.00 | 10.25 | |
| 13 | 1.54 | 3.50 | 6.00 | 7.50 | | 8.25 | 12.25 | |
| 13 | 156 | 4.00 | 6.75 | 9.25 | | 9.25 | 14.00 | |
| 14 | 176 | 4.50 | 7.75 | 11.50 | 6.00 | 10.50 | 15.50 | |

| L'gth of blocks | For rope, diam | Single iron,
bushed. | Double iron,
bushed. | Triple fron,
bushed. | Single roller,
bushed. | Double roller,
bushed. | Triple roller,
bushed. | | |
|-----------------|----------------|-------------------------|-------------------------|-------------------------|---------------------------|---------------------------|---------------------------|--|--|
| Inch. | Inch. | Each | Each | Each | Each | Each | Each | | |
| 3 | 5-16 | 80.75 | \$1.25 | | \$1.10 | \$2.10 | | | |
| 33% | 36 | . 60 | 1.40 | \$2.25 | 1.15 | | \$3.25 | | |
| 4 | 3/2 | .0> | 1.60 | 2.50 | 1.25 | 2.40 | | | |
| 5 | 36 | 1.10 | 2.00 | 2.90 | 1.50 | 3.00 | 4.60 | | |
| 6 | 34 | 1.40 | 2.50 | 3.50 | 2.00 | 3.80 | 5-45 | | |
| 7 | 76 | 1.60 | 2.75 | 4.00 | 2.30 | 4.50 | 6.25 | | |
| 8 | 1 | 1.90 | 3.50 | 4.75 | 2.80 | 5.20 | 7.35 | | |
| 9 | 1 | 2:20 | 4.00 | 5.25 | | 5.80 | 8.00 | | |
| 10 | 11/8 | 2.75 | 4.75 | 6,00 | 3.90 | 6.05 | 9.25 | | |
| RE | 179 | 3.15 | 5.80 | 7.50 | 4.40 | 7.50 | 30.75 | | |
| 12 | 2 % | 3.50 | 0,50 | 8.50 | 5.00 | 8.50 | 12.50 | | |
| 13 | 134 | 4.00 | 7.00 | 10.00 | 5.05 | 9.00 | 14.25 | | |
| 14 | 176 | 4.50 | 8,00 | 12.00 | 6.15 | | 16.00 | | |
| 15 | 8% | 5.25 | 9.25 | 13.75 | 7.00 | 12.25 | 17-75 | | |
| 16 | 176 1 | 6.75 | 11.50 | 17.00 | 8.50 | 15.00 | 20.50 | | |

Inch.. 1/4 1 11/4 13/4 13/4 13/4 15/4 11/4 2 Price. \$6.50 .60 .75 .90 1.20 1.75 2.50 3.00 3.50 For Galvanizing Straps, add 10 per cent. to list, HEAVY TACKLE THICK MORTISE BLOCKS,

Checks Edge Bolted, with Loose Hooks, Rings or Shackles.—Extra Heavy Inside Iron Straps,— Lignumvitæ or Iron Sheaves,

| L'gth of blocks | For rope, diam | Single Iron,
bushed. | Double iron,
bushed. | Triple iron, bushed. | Single roller,
bushed. | Double roller,
bushed, | Triple roller,
bushed. |
|-----------------|----------------|-------------------------|-------------------------|----------------------|---------------------------|---------------------------|---------------------------|
| Inch. | Inch. | Each | Each | Each | Each | Each | Each |
| 6 | 36 | \$2.00 | \$3.75 | \$5.25 | \$2.80 | \$4.90 | \$7.10 |
| 7 | 1 | 2.30 | | 6.10 | 3.30 | 5.70 | |
| 8 | 11/8 | 2.65 | 5.00 | | 3.75 | 6.50 | 9.50 |
| 9 | 134 | 3.00 | | | 4.25 | | |
| 0.1 | 176 | 3.75 | 6.35 | 9 50 | 5.00 | 9.00 | 12.75 |
| 11 | 1.78 | 4.25 | | | | | |
| 1.5 | 179 | 5.00 | | | | | 16,50 |
| 13 | X 56 | 5.50 | | | | | 18,50 |
| 14 | 1.96 | 6.25 | | 16.00 | | | |
| 15 | 134 | 8.00 | | | | | |
| 15 | 1/6 | 10.00 | | | | 21.50 | 33 50 |
| 18 | 2 | 15.00 | | | | ***** | 111222 |
| 20 | 2% | 20.00 | 36.00 | 44.00 | | | |

Penn Hardware Company, Reading, Pa. turer of The Ashland Patent Bag Holder, in have issued, under date of the 2d instant, the

PRICE LIST AND DISCOUNT SHEET TO 1880 CATA-LOGUE OF PENN HARDWARE CO. Dis. per

ople Parers, Corers and Slicers, "Triumph," Nos...... 5 6 9 10 11 12 Per doz....\$0.40 0.46 0.40 0.42 0.56 0.59 Nos.... 15 16 17 115 116 117 Per doz...\$0.57 c.63 0.80 0.65 0.71 0.88

Nos...... 26 26 27 225 226 227 Per dom... \$0.57 c.63 0.80 0.65 0.71 0.88 Nos..... 22 21 122 123 222 223 Per doz...\$1,60 1.90 1.64 1.94 1.80 2.10 Nos........81 77 82 101 105 Per gross.....\$2.25 2.56 2.56 4.15 4.15 NOS...... 4 14 400 405 410 Fer gross.....\$2.20 2.20 140 1.40 1.60

Nos...... 415 423 425 430 435 Per gross.....\$1.50 1.80 1.80 2.22 2.22

Per doz. \$0.84 0.96 1.10 1.30 0.80 Nos. 9 12 11 95 100 Per doz. \$1.40 3.10 1.70 1.75 2.28 36, Door Pulls \$51.40 3.10 1.70 1.75 2.28 36, Door Pulls \$52.80 150 159 Per doz. 44 44 .60 52 37.38, Turnbuckle \$52.80 150 159 Per gross. \$6, 31 2.40 7.00 4.00 8.68 0.80 0.30 Bolts, Shutter \$52.80 16.80 18.00 Per doz. \$52.80 16.80 18.00 Per doz. \$52.80 16.80

7er tox. part 1.2. Shutter Catches, per gross. No. 20, \$1.70; No. 120, \$5.50.
120, \$5.50.
120, \$5.50.
120, \$5.50.
120, \$5.50.
120, \$5.50.
120, \$5.50.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20.
120, \$1.20. Nos 300 301 302 303 304 305 Per doz.. \$5.50 5.50 5.50 15.00 15.02 Nos..... 306 307 400 401 402 403 Per doz. \$15.00 15.00 7.00 7.00 7.00 7.50 Nos. 404 405 406 407
Per doz. \$16.00 16.00 16.00 16.75
Brackets, Lamps.
Nos. 125 135 145 155
Per doz. \$5.00 5.00 5.00 6.90
Ink Tops

Nos...... 20 21 22 23 24 25 Per doz....\$9,03 9.09 9.09 9.09 9.09 Not..... 26 27 28 29 10 11 Per doz... \$9.00 9.00 9.00 9.00 4.50 4.50 Nos..... 12 13 14 15 16 17 Perdos. \$4.50 4.50 4.50 4.50 4.50 4.50 Nos...... 18 19 30 31 32 33 Per doz...\$4.50 4.50 6.50 6.50 6.50 6.50

Nos 34 35 36 37 38 39 Perdoz...\$6,50 6,50 6,50 6,50 6,50 Nos...... 50 51 52 53 54 55 Per dox...\$12.50 12.50 12.50 12.50 12.50 12.50 Nos...... 56 57 58 59 60 61 Per doz . \$12.50 12.50 12.50 12.50 14.00 14.00 PRICE LIST, AND DISCOUNT SHEET TO SUPPLEMENT,

Page in Supplement, January 2, 1882.
ment, January 2, 1882. Barn Door Rail. 55

Nos 5.10 6.20 8.50

Square Grooved Rail. per 100 feet. No. 6, \$6. .55

Sliding Door Rail, per 100 feet. No. 5, \$7.50...55

Barn Door Staye, per dooz. No. 1, \$2, No. 2.

| | | | _ | - | |
|--|---------------------------|------------------|----------------|----------------------|----------------------------|
| TV 1 12 | ** | | | | |
| o, Bed Fasts, per in.,
to, tr, Sash Centers. | No. 1 | 2, 852 | cen | S | 53 |
| Per gross | ***** | \$5.0 | o 6 | 50 | 13.00 |
| 9, Bed Fasts, per lb., 10, 11, Sash Centers. Nos | Bline | l, per | doz. | pair, | No. 3. |
| Nos | | . 2 | 3 | 4 | 5 6 |
| Nos. All Iron, per set. Porcelain Wheel. Ligaumvitæ Wh | p. 86 | \$0.1
\$.1 | 5 .17
7 .19 | .15 .1 | 16 .18
20 .22
23 .26 |
| 14, Globe Casters | | | | inch | a ine'i l |
| Wood Wheel, per
Porcelain Wheel
Lignumvitæ Wh | r set.
, per
cel, p | set | | \$0.22
.26
.30 | ·33
·40
·45 |
| 15, Hooks, Hotel of
No. 160, \$5.90; No. | or Sc | \$c.go | louse | , per | gross, |
| of Wawlacho Hooks | | | | | |
| Nos o
Per gross\$1 70
17-23, Hat and Coat | 00 | I
2.40 | 01 | 2,65 | 2 65 |
| 17-23. Hat and Coat | Hook | s | | | 55 |
| Per gross. \$4.15 | 4.15 | 6.10 | 6.10 | 7,40 | 7.40 |
| Nos 310
Per gross. \$10.80 | 315 | 1.90 | 080 | 30 4
.50 6,2 | 5 7.25 |
| | | | | | |
| Nos. Per gross. 6, Sash Lifts Nos. Per gross. 27, Shutter Bars | \$1.90 | 1.9 | 5 | 2.30 | 2.30 |
| 6, Sash Lifts | ***** | ***** | | 260 | 260 |
| Per gross | 53.50 | 4.0 | 5 | 4.25 | 5,00 |
| 27, Shutter Bars | | | | | 55 |
| Nos | 150
80.34 | *5 | 5 | 160
·37 | 165
-43 |
| 28, 29, Drawer Pulls. Nos 5 Per gross \$4.25 30, Grindstone Fixtus | 10 | 15 | 20 | 25 | 30 |
| rer gross\$4.25 | 4,85 | 4.00 | 5.20 | 5,00 | 5.00 |
| Inches | 15 | | 17 | | 19 |
| Inches | 21 | | 24 | | 58 |
| Per doz sets | \$25.00 | | 27.50 | | 33.00 |
| Inches 4 | 5 | | 5 | 7 | 8 |
| 32. Brass Knob Barre | l Bol | ts | **** | | 35 |
| Inches 3
Per doz\$1.00 | 4
1.12 | 5
1.45 | 6
1.80 | 7 2,12 | 8
2.45 |
| 33-41, Frame Pulleys | | | *** | | 50 |
| Nos 60
Per doz\$2.50 | 160
2.75 | 26
3. I | 0 : | 24
8.60 | 2.85 |
| Nos\$3 | 14
20 | .70 | | 42
85 | .57 |
| Nos 79
Per doz\$1.00 | 89 | 85 | 95 | 86 | 95 |
| Nos 100
Per doz\$0.70 | 105 | 110 | 800 | 205 | 210
1.03 |
| 31, Cast Iron Bolts Inches | vo. 1,
per i | per g | 7088,
\$6 . | \$7 | 50
55 |
| Nos Per gross Per pound. Organ Casters, No. 10 45-47, Thumb Latches Nos Per doz. | | \$3.00
\$0.18 | 3. | 50 | 4 25
.18 1/4 |
| Organ Casters, No. 10
45-47, Thumb Latches | 00, pe | F 100, | \$6 | | 55 |
| Nos
Per doz | \$1. | 10 | 2.2 | 5 | 3.60 |
| We have receive | d the | e foll | OWIII | gan | nounce- |
| ment of an advanc | | | | | |

At a meeting of the undersigned manufac-turers, held in New York December 31, 1881, it was agreed to adopt the following

C. RICHARD'S HARDWARE CO., H. L. Judd & Co.

The Manufacturers of Vulcan Horse Nails have advanced the list price 2 cents and quote as follows:

VULCAN HORSE NAILS.

Pointed and Blued. \$0.30 c.27 0.25 0.24 0.23 0.22 Lam, very respectfully,

Thos. A. La Motte.

We have received from the Iowa Barb Wire Company the following circular, show ing prices and terms for Barbed Fence Wire for the season commencing January 2, 1882. The office of the company in this city is at 99 John street.

Prices to Dealers. — Orders of 50 tons and over, sold by or for the same manufacturer, and shipped within the calendar year of 1882, to or on the order of one and the same buyer, and in lots of not less than to tons each, 8 cents per pound. When 50 tons of any such order is sold and shipped, a rebate of 1/4 cent per pound may be made upon such part of such order as has been shipped, and further shipments in 10-ton lots or for the same said manufacturer, to or on the order of the same said buyer, during said calendar year, shall be subject to the same rebate. Orders less than 50 tons, shipped in lots not less than 10 tons each, from one manufacturer to one buyer, 8 cents per pound; orders less than 10 tons, 8½ cents per pound. The above prices are for barb fencing composed of two or more main wires. Barb wire composed of a single main wire may be sold at 1 cent per pound less than above prices. Gal-vanized Barb Wire will be sold at not less than I cent per pound more than the above prices. All Barb Wire sold under this Price List must be delivered within the calendar Meyer that he will be associated with us, year of 1882.

Terms of Payment,—Cash in sixty days from date of each invoice, or from average date of invoices. Two per cent. discount for cash may be made on sales made under this price list when paid in or within ten days from date, or from average date of invoices. When more than sixty day time is allowed, interest at the rate of \$ per cent. per annum, at least, shall be required; but when the legal rate in the State where the buyer lives is less than 8 per cent., the

such lower rate only may be required.

Terms of Delivery.—The above prices are free on board at Worcester and Boston, Massachusetts; New York City; Buffalo, N. Y.; Cleveland, Ohio, and Chicago, Ill. Manu-Y.; Cleveland, Ohio, and Chicago, Ill. Manufacturers and dealers must make the freight to any buyer not less than the published tariff rate for 10-ton lots, of the railroad or roads conveying the goods sold from the nearest point of free delivery to said buyer. Manufacturers must sell to consumers as follows: In 10-ton lots, shipped by one manufacturers to one hover at one time to be selected. facturer to one buyer at one time, nowless than 8½ cents per pound. In less than roton lots, not less than 10 cents per pound. On last named, i.e., less than 10-ton lots, freight may be allowed not to exceed 1 cent per pound, but no more than the actual freight to be allowed under any circumstances.

We have received the following circulars:

PHILADELPHIA, January 3, 1882. To the Jobbing Trade: Please notice that on and after this date the disc unt on Mrs. march street.

Potts' irons known as the Nos. 60 and 65, and 160 and 165 square-back irons, will be the same as on the Nos. 50 and 55, and 150 and 155 double-pointed irons.

EXTERPRISE MFG. Co., OF PA.

AMERICAN MACHINE CO.

STAMFORD, CONN., December 31, 1881

notify the trade that on the first of January next we will remove our salesroom in Boston to No. 224 Franklin street. Mr. A. T. Young who for many years has been connected with our Boston office, will continue to be our reour Boston office, will continue to be our re-presentative in that city, and will, in the future, devote his time and attention exclu-sively to our business. Respectfully, The Yale Lock Mrg. Co.

Office of Merchant & Co., Importers of Tin Plate, M e als, &c. Philadelphia, January 2, 1882.

DEAR SIR: We have opened an office at Cliff and Beekman streets, New York City, where we shall be pleased to see you when in New York. Address all orders and inquiries to Philadelphia. Very truly yours, MERCHANT & Co.

TO OUR FRIENDS.

PHILADELPHIA, Jan. 2, 1882.
Gentlemen.—We are now located in our ew factory, Fifth and Berks streets, where we have one of the most complete plants for we have one of the most complete plants for the production of files and rasps that there is in this or any other country, and assure you we are not unmindful of the assistance ren-dered by one and all of our patrons, which enabled us to make our business a success. We promise you in the future, as in the past nineteen years of our experience, to do every-thing on our part to further the interests of ourselves and patrons, and keep up the of ourselves and patrons, and keep up the reputation of American files and rasps, which has been so nobly earned abroad as well as at home. Believe us, none but a high standard of files and rasps shall bear McCaffrey's name, and hope our friends shall enjoy properity and a happy New Year. Truly yours,

A. FIELD & Sons, Manufacturers of Tacks, Shoe Nails, and Small Nails of Every Variety, Taunton, Mass., January 1, 1882.

McCaffrey & Bro

DEAR SIR: On and after this date our Philadelphia agency will be in charge of Mr. Thomas A. LaMotte, No. 415 Commerce street, where a full and complete assortment of our manufactures may be found. All orders, whether for regular sizes or for sizes to be cut to order, will receive prompt atten-tion. Mr. Walter L. Diver, who has had charge of our agency during the last year, leaves us to embark in another business; he enjoys our utmost confidence, and we wish him success. Soliciting a continuance of your patronage, we are, yours truly,
A. Field & Sons.

415 COMMERCE ST., PHILADELPHIA, Jan. 1, 1882 DEAR SIR: Referring to the inclosed cir cular, I beg to inform you that I have this day assumed the management of Messrs. A. Field & Sons' Tacks of every variety, also Tubular Barrow and Truck Manufacturing Company. Trusting that I shall receive the

DISSOLUTION.

Co., at their office, \$3 Chambers and 65 Reade streets, New York.

EUGENE BISSELL, Referring to the above, we announce to our friends that we shall continue the whole-sale auction and commission business at our sale auction and commission business at our present place of business, 83 Chambers and 65 Reade streets, New York, under the firm name of E. Bissell & Co. Our Mr. Bissell will take the entire charge of the business, as well as the cataloguing, classifying and selling of all goods, as heretofore, and takes this opportunity to cordially thank all of our numerous patrons and consignors for the many favors of the past. For the information of the trade, we will state that our capital and facilities for doing business will be increased, and that we shall endeavor to make their business transactions with our house of the most pleasing and satisfactory nature. We also take pleasure in announcing to the numerous friends of Mr. George F Meyer that he will be associated with us Trusting we may receive a continuance of our patronage and confidence in the future as in the past, we remain, yours respect fully, E. BISSELL & Co.

TO THE TRADE.

Boston, January 2, 1882. Gentlemen.—We have this day sold to Messrs. Salisbury & Austin, of this city, our Stock, Dies, Patterns and Special Machinery. They will succeed to our business and that formerly carried on under the style of the B. D. Washburn Manufacturing Co. In thus closing out our business, we haveto thank our many friends and customers for the liberal patronage they have given us in the past, and to cordially refer them to our ssors, who will give their wants prompt and careful attention. All our accounts now outstanding will be collected and settled by

us. Yours respectfully, CHARLES E. LORD & CO. Having purchased the business of Mesers. Charles E. Lord & Co., as above, we shall be able, with very largely increased stock and facilities for manufacturing, to give to our customers greater advantage in purchasing than ever before. We solicit further orders, and our aim shall be to win confidence and approval by our method of doing business. We are, respectfully yours,

SALISBURY & AUSTIN.

P. O. Box 3093. Office, 35 and 37 Battery-

BRITISH IRON AND METAL MARKETS.

[Special Cable Dispatch to The Iron Age.]

London, Jan 4, 1882.
Scotch Pig.—The market was irregula during the week, prices rising and falling, but is now strong, with a fair business doing at an advance of 1/@ 1/6 upon last week's DEAR SIR: We, the undersigned, beg to prices. Warrants are quoted 52/6. The following are to-day's quotations for makers

brands, No. 1: Fartsherrie, alongside, Glasgow......60/ Carnbroe Glengarnock " Ardrossan.....55/ Eglinton Lighterage from Ardrossan to Glasgow is 2/@

quote as follows: Middlesbro' No. 1 Foundry..... No. 2 " 45/6 No. 3 " 43/6 No. 4 " 42/

West Coast Hematites-Are in good demand, and prices are firm. We quote mixtures Nos. 1, 2, and 3, 62/6 @ 63/.

Manufactured Iron.-The demand con-

" " " Common...
Welsh Bars.... 8. 10/ @ 9.00/

Steel Rails.-The demand is large, and prices are advancing. We quote ordinary ections I to 2 mos., £6. 5/@ £6. 10/. Iron Rails.—There is very little demand.

Prices, however, are firm. We quote Welsh unchanged, £5. 10/@ £6. Old Rails.-The offerings are light, with

few sales. Old Tees are quoted firm at £4. 2/6 @ £4. 7/6, c. i. f. United States

Scrap Iron.-Business during the week as been light. Prices are steady. We quote: Wrought, £4. 5/@ £4. 10/, c. i. f. United States ports.

Copper.—The market is easier. atest quotation for Best Selected is £77. Tin.—The market is rather easier. Eng-

lish Ingots are quoted £109. Tin Plates .- The market is steady, and prices are firmer. We quote:

Tin Plates, 10 X 14, 1st qual. Charcoal..24/ " 2d " ...22/ @ ...
" 1st " Coke20/ @ ...
" ad "18/6 @ 18/5 Spelter.—We quote: Swansea, £18.

Lead .- The market is quiet. English Pig quoted £15. 5/.

Freights.-Steam freights from Glasgov are advancing, the Anchor and State lines

New York, January 2, 1882.

Notice is hereby given that the firm of Bissell & Welles is this day dissolved by mutual consent. The business of the late firm will be settled by Messrs. E. Bissell & water. Other sales are rumored, but opertrade say that all the indications point to another "boom," and that everything in the shape of Iron is bound to go much very extensive movement in foreign Iron, and favors the views of those who believe that prices here will before long become the very profitable to suppliers. Hence it is thought not improbable that supplies may be increased, which would have an injurious \$24.50 @ \$25 for No. 2 X, and \$24 for Gray Tin Plates. - Although the market since Forge, delivered at Hoboken.

> balance affoat, at full figures, transpired since our last writing. In other brands, no business of importance is reported. We quote: Eglinton, \$25; Carnbroe, \$25; Glengarnock, \$25.50; Gartsherrie, \$26, all to arrive, and Coltness, on the spot, \$26.50 @ \$27.

Rails, \$48 @ \$50.

Old Rails.—Business in Old Rails has been quiet, and we do not hear of much inquiry. A sale of 400 tons D. H. Steel at \$36 here is reported. We quote: T's, \$29; and D. H., \$31 @ \$31.50.

Scrap.-Since our last writing orders for 2000 tons Foreign Scrap have been placed at a price equivalent to \$30.50 here. Prime No. I Wrought, from yard, continues in short supply, and holders ask \$32.50.

has occurred in prices. We hear of several small lots having been sold at a slight advance on base figures, while the market in general remains firm and very active. There a strong upward tendency, and some manufacturers decline to receive orders except at the price ruling at the time of delivery. We

quote: Refined Bar Iron, from store, 2.9¢. A meeting of the Western Iron Association vas held in Pittsburgh to-day, at which 50 mills were represented. The situation was fully discussed, and the motion to affirm the present card rate, viz., 2½ cents, was carried almost unanimously.

Henry G. Nichols died on Friday, Dec. 30, 1881, in the 64th year of his age. Mr. Nichols had a large acquaintance among the furnac owners of this State and Pennsylvania, and Cleveland Pig.-Prices are steady. We was upwards of 40 years in business.

METALS.

Copper.-Dealings during the week have been insignificant, within the range of 201/4 @ 201/4 for Lake Superior, the market still being in a holiday state. Of "futures" none are offered, and few asked for. London cables Chili Bars, £71, and Best Selected, £78, which is another advance. "London, Dec. 17.—The past week has seen a further improvement in the value of this metal, and spirit of speculation naving been set going, it has ever since become more and more animate by the repeated favorable advices of satisfactory statistics." Manufactures are unaltered. We quote: Bottoms, 31¢ @ 32¢; Braziers, 30¢ @ 36¢; Circles, 33¢ @ 36¢; Segment Sheets, 33¢; Fire-box ditto, 30¢; Sheathing, 28¢, and Bolt Copper, 30¢.

EXPORT OF DOMESTIC COPPER DURING THE FIRST TEN MONTHS. Ore, cwts... 1881, 1880, 1881, 49,419 \$1,530,713 \$678,392 IMPORT-TEN MONTHS. Ore, cwts... 56,103 39.131 \$115,112 \$177,22 Ingots, lbs... 3,693,171 4,447,895 85,777 695,60 Manufact'r's 279,747 317.94 095,060 317,946

Total....

gland 900 tons; from Australia thither 1400 tons, and from the Straits to the United States 400 tons. The December deliveries are advancing, the Anchor and State lines demanding 17/6 pton.

IRON.

American Pig.—The demand for Pig Iron is active, and there seem to be more buyers than sellers in the market; 2500 tons Thomas sold during the week at \$25,50 for No. 1 X, and \$25 for No. 2 X at tidewater. Other sales are rumored, but operators seem unwilling to state particulars. Some usually well-informed people in the trade say that all the indications point to say the sales are rumored people in the trade say that all the indications point to say the sales are rumored people in the trade say that all the indications point to say the sales are rumored people in the trade say that all the indications point to say the sales are rumored people in the trade say that all the indications point to say the sales are rumored people in the trade say that all the indications point to say the same trade say that all the indications point to say the same trade say that all the same trade say that same trade s cause. The high prices now ruling are, per haps, the chief reason of the reaction. Such advanced rates not unnaturally deter opera-tors to some extent to continue buying, for not only are they higher than what they have been for many years previous, but they are also now sufficiently advanced to make influence upon future prices."

IMPORT OF TIN INTO THE UNITED STATES DURING THE FIRST TEN MONTHS.

| 1881, 1880, 1881, 1880, Value, 6,046 | 11,785 | 83,310,309 | 85,422,027 | 98,756 |
| Net import... 6,709 | 11,546 | \$3,200,156 | \$5,324,171

orge, delivered at Hoboken.

Scotch Pig.—The visible supply of Scotch more doing than was anticipated, and the Scotch Pig.—The visible supply of Scotch Iron has been greatly reduced during the week; the agents for Gartsherrie, Eglinton and Glengarnock brands are completely sold out, and stocks in second hands are said to be unusually light. A sale to a consumer of Liverpool the market is steady: Coke at 18/ 1300 tons Gartsherrie, part on the spot and @ 19/ (per cable), and Charcoal, 20/ @ 22/ IMPORT OF TIN PLATES-TEN MONTHS.

Tons. Tons. Value. Value. 474 413 47.296 45.583 Net import...150,713 135,654 \$12,219,855 \$14,582,893

Joseph Byrne & Son, metal brokers, No. Rails.—No new business, either in Steel or Iron Rails, has come to our notice, and we repeat former figures, viz.: Steel at mill, future delivery, \$57.50 @ \$60; and Iron announce that in connection with my son Horatio S. Byrne, I again resume the metal brokerage business which I commenced in January, 1854. The varied experience of these many years in the Tin Plate trade in regard to quality, brands and market value, I hope to be able to utilize to the benefit of our correspondents, who may also rely on our giving watchful attention to their interests and good faith in the execution of orders.

Lead.—There has been no change since short supply, and holders ask \$32.50.

Manufactured Iron.—The pressing demand for Merchant Bar Iron has continued during the past week, but no material change

| Struct.—There has been of a retail character merely, at \$5.15 for Common Western, and \$5.20 for Refined, the situation being a featureless one. The asking figure for Common Domestic is generally 5¼¢. St. Louis quotes \$4.80 for Hard, and \$4.90 for Soft, with 22½¢ freight \$7 100 pounds from East St. Louis, and 4¢ transfer to be added. According to the estimate of the most competent authority in lead matters, Domestic production in 1831 may be fairly estimated at about 110,000 tons. London quotes \$\mathbb{P}\$ cable: Good English or Spanish brands, £15. 10/cost, freight and insurance. "London, December 17.—There is very little business doing in this metal, and with a slow demand sales are difficult to effect, and prices occasionally show symptoms of ease, although nominally quoted without alteration."

IMPORT OF LEAD INTO THE UNITED STATES DURING

| | MONTHS. | IRST TEN | THE F | |
|---|---|----------------------------|---------------------------|---|
| 1880.
Value,
\$249.843
3,346,277 | 1881.
Value.
\$198,058
4,606,994 | 188c.
Lbs.
6,429,721 | 1881.
Lbs.
,701,776 | Pig lead & old5
Manufrs |
| \$3,596,120 | \$4,805.052 | | | Total |
| 1.498
14 | 34,815
685 | 42,135 | 767,210 | Re-export:
Pig lead
& old.
Manfrs. |
| 81,512 | \$35,500 | | | Total |
| 39,982 | 162,245 | | xport: | Domestic e
Lead &
mfrs. |
| \$41,494 | \$197,745 | | | Total |
| | | | | There has |

rices. We quote: Pipe, 7½¢; Sheet, 8¢; Tin-lined Pipe, 15¢, and Block, 35¢; all less 10 % to the trade.

Spelter and Zinc.—The demand for Spelspecies and zinc.—The demand for specter continues unabated at 6¢ for both Domestic and foreign. This metal is in a very good position, production in this country not sufficing to meet requirements. In Europe it is situated as favorably; W. H. has been sold at Breslau, on December 14, at 17.40 marks.

IMPORT OF SPELTER AND ZING INTO THE UNITED STATES DURING THE FIRST TEN MONTHS.

\$162,375 \$476,778 Re-Export. Sheet Zinc... 16,586 56,876 1,009 3,018 3,018 \$161,366 \$473.760 18,302 Ore, cwts.... 18,302 5,153 \$13,701 \$17,808 Spelter and Zinc, lbs...1,220,861 1,613,730 103,155 143,687 \$116.856 \$161,495

"London, December 17th.—The Continental market has been going up further, while the market here has remained quiet, with a few second-hand lots offering cheap. These have now been cleared off, however, and the tone is firm. We quote ordinary brands at £17.

15/@£18, and specials at £18. 5/@£18. 7/6.

Sheet Zinc.—The market is active at 7% \$\psi @ 81/4.

Antimony .- Our market has naturally been quiet, but there is something doing all the time at $14\frac{1}{2}\phi$ @ $14\frac{1}{2}\phi$ for Cookson, and 13ϕ for American.

COAL.

Anthracite Coal is fairly active, a sharper Anthracite Coal is fairly active, a sharper temperature contributing to sustain the market. About 60 per cent. of the aggregate consumption being for domestic purposes, temperature is a factor of considerable importance as a regulator. There was something said yesterday, among a few men prominent in the trade, about the expediency of a partial suspension at the mines this month, but outsiders were left to infer that none might be necessary if the weather conmonth, but outsiders were left to infer that none might be necessary if the weather continues as at present. On this point the Miners' Journal says: "It will require at least half time, or half the collieries on full time, to supply the furnaces and the general trade, so there will scarcely be any general suspension during the winter months." Among the producers a feeling of satisfaction in producers a feeling of satisfaction is expressed that at last, after years of embarrassment from an excessive output of Coal, con-sumption seems to have overtaken production, and a healthful equilibrium, it is confidently believed, will continue. No falling off is an-ticipated in the demands from the iron furnaces, as there is no abatement of activity in naces, as there is no abatement of activity in general manufactures, and railway improvements are still the order of the day. Prices continue at previous quotations: Wyoming, \$3.75 @ \$3.90 for lump, Grate and Chestnut; Egg and Stove, \$4.05 @ \$4.25; Lehigh Lump, \$4.40 @ \$5; other sizes, \$3.90 @ \$4.35; Reading, \$3.90 @ \$5, for most decriptions; Chestnut, \$3.55 @ \$4.25.

Bituminous is less active, but there is no surplus, and prices are remunerative to ship pers. The regular quotations for Cumberland and Clearfield are \$3.75 at Baltimore, and \$5.25 at New York. Vessels scarce. Freights Eastward are lower. To Boston,

Freights Eastward are lower. To

Freights Eastward are lower. 10 Boston, \$1.50; Norwich, 90¢; Providence, \$1.00.
The Delaware and Hudson Coal Company report that the business done in 1881 was the largest in their history. Shipments of Coal by the Schuylkill Canal have closed for the

The total amount of Anthracite mined for the year is 28,865,667 tons, against 23,931,541 tons for the same period last year, an increase of 4,934,126 tons. The total amount of Bituminous mined for the year is 4,918,943 tons, against 4,303,403 tons for the corresponding period last year, an increase of 615,540 tons.

FOREIGN TRADE MOVEMENTS.

The following is a summary of foreign trade movements for the past week:

For the week ended December 31:

Since Jan. 1... \$332,401,862 \$466,037,050 \$439,191,480 Included in the imports were articles of archandise valued as follows

| Qı | uantity. | Value |
|--------------|----------|---------|
| Anvils | 402 | \$3,442 |
| Brass goods | 20 | 4,001 |
| pronzes | 23 | 4,198 |
| Chains &c | 20 | 050 |
| Liocks | 18 | 1,647 |
| Copper | | 90 |
| Cutlery | 172 | 47,023 |
| Pins | 4 | 250 |
| Gas flxtures | 2 | 1,187 |
| Guns | zz8 | 24,856 |

IMPORTS

Steel. Abbott Jere, & Co.

Abbott Jere, & Co. Cases, 52 Baring Bros. & Co. Blooms, 179 Blake Bros. & Co. Bundles, 220 Tires, 12. Brown Bros. & Co. Packages, 16 Cases, 6

Drawn Wm.
Packages, 122
Drexel, Morgan & Co.
Blooms, 1572
Duval H. R.
Plates, 107
Bundles, 10
Case, 1

Bundles, 10
Case, 1
Bands, 47
Bands, 47
Kursheedt Mfg, Co,
Mdse,, Cs., 4
Moss F, W,
Bars, 26
Bundles, 185
Mdse,, cks., 7
Oelrichs & Co
Bundles, 120
Tomlinson Spring Co,
Bundles, 135
Woodford W, O,
Bundles, 135

Bunoles, 693 Bars, 705 Cases, 67 Plates, 61

Bundles, 482 Hoops, bdls.; 312

Rump C. F. Brass frame, &c., 1 Vahn & Dreyfus, Copper, bbls., 26

OLD METALS, PAPER STOCK, &c.

It would be difficult to summarize the posi-It would be difficult to summarize tion more concisely than has been done by Mr. James M. Swank, Secretary of the Iron and Stool Association, who says: "The year

and Steel Association, who says: "The year 1881 has been the most prosperous the Ameri-can iron trade has ever experienced. It has

| Hardware | 18 2,89 | i inter | , |
|---|--|---|-----|
| Iron, hoop, tons | 20 SI | Of Hardware, Iron, 8 | |
| Iron, sheet, tons
Iron ore, tons
Iron, other, tons | 1.767 4.15 | the Port of New York | 0 |
| Lead, pigs | 783 3,49 | Hardware. | |
| Nails | 57 1,24 | American Salt Co | 7 |
| NeedlesOld metal | 20 5.69 | Mach's, case, r | 1 |
| Plated ware | 2,17
2 3
1,12 | Cutlery, cask, r | 1 |
| Saddlery.
Steel
Spelter.
Silverware. | 50,931 221,52
531,278 21,21 | Files, casks, 2 | (|
| Silverware | 8 53
40,537 182,87 | Cart shells og 26 | |
| Tin, boxes.
Tin, 1,497 slabs, 168,058 l
Wire | 4,00 | Cunningham J. L. T. & | |
| | | Iron nails, casks., 35
Davies & Co. | |
| articles, compared wi | the imports of leading
th previous dates: | Defamater C. H. & Co. | |
| For t | he 52 weeks Same
k. of 1881. time 1886 | Packages, 5 Dolge A Cases, 12 | |
| Cutlery, pkgs 17 | 2 6,848 8,46 | Cases 2 | |
| Iron, R. K., bars | . 351,253 586,05
3 42,286 42,51 | Erdmansdorf Mr. Rifles, case, r | |
| Steel, pkgs 50,93
Tlu, boxes 40,53
Tlu slabs, lbs 100,05 | 1 1,281,245 606,84
7 1,629,083 1,671,66 | Guns, cs., 10 | |
| | 8 19,242,911 26,254,26
ESIVE OF SPECIE. | Chain, casks, 17 | 1 |
| For the week ended | | Anvils, 160 | T. |
| .9.00 | 1991 | Cases, 11 | I |
| Prev. reported 337,953. | 865 \$7.938,224 \$4,613,13
009 398,139,461 366,040,74 | Packages, 3
Hildick A. H. | I |
| | 874 \$406,077,685 \$370,653,87 | Anvils, 100 | 1 |
| EXPORTS | OF SPECIE. | Vises, cask r | I |
| For the week ender | | Heuffel & Esser | I |
| Dec. 29—Steamer Westl
American silver bars. | \$54.00 | Hensel, Bruckman & | |
| French silver coin
Dec. 31-Steamer Gern | nanic, London 8,50 | Knitting Machine Co. | F |
| American silver bars.
Mexican silver dollars | | Case, t | 1 |
| Total for the week | \$212.50 | | 1 |
| reviously reported | 11,003,44 | Meyer H. A., Jr.
Packages, 27 | (|
| | 881 \$11.335,94 | Cases, 2
Pim, Forwood & Co. | 200 |
| | MD-C | | 7 |
| | PORTS | Rothschild L. & Co. | 1 |
| Hamburg.
Quan. Val. | Nails, cs 47 \$42
Pumps, pkgs. 4 16 | Schoverling, Daly & | |
| Quan. Val.
Mach'y, pkgs. 34 \$8,029
Hdw., C8 62 1,728 | Dew. ma., cs., 30 co | CHARGE, | C |
| Mf. iron, pkgs 1 331
Brass, cs 117 6,000
Nails, bxs 9 24
Guns, cs 1 45
Hdw. cs 2 35 | Ag. imp., pkg. 11 43
Nails, hhds 13 47 | Mach'y, cs., 3 | |
| Guns, cs 1 45
Hdw., cs 2 35 | Scales 16 48
Nails, kegs 249 86 | Cases, 3
Vom Cleff & Co. | |
| Spelter, slbs3.287 10.080
Ag.imp., pkgs 160 40,903 | Scales, pkgs. 78 50 | Ward A. | |
| Sew. ma., cs., 723 9,292 | Con tubes cs 8 ro6 | | |
| Guns, cs 16 310
Type wr., cs 6 170
Clocks, bxs 19 420 | Mach'y plore rea 0 ar | Cutlery, &c., pgs., 44 | A |
| Bremen. | Hdw., cs 4 6 | manufacti puntout d | E |
| Ptlm., gals.492,669 40,623
Ag. imp., pkgs 50 1,550
Hdw., pkgs 84 1.488 | Mach'y, pkgs, 135 5,81 | Witte John G & Bro | E |
| Hdw., pkgs 84 1.488
Wringers, cs. 20 550
Mf. iron, pkgs. 4 101 | Hdw., cs 60 1.39 | Cutlery, cs., 44
Sheep Shears, cs., 6 | E |
| Rotterdam. | R. r. cars 9 2,20 | Iron. | E |
| Pumps, pkgs. 16 1,039
Hdw., cs 24 947 | Cartridges, cs 6 re | Old rails pes rous | |
| Wringers 32 1,290
Ag. imp., pkgs 1 54 | Ptlm., gals37,112 4,15
Bayonets, cs., 1 | Wire rods, coils, 1280 | E |
| Clocks, bxs 7 284
Ptlm., gals.291,437 23,115 | W. mills, pgs. 18 65
Iron, pkgs 214 25 | Becker F. | E |
| Mf. iron, pkgs 45 2,451
W. mills, pgs. 28 1,200 | Clocks, bxs 14 47 | Wire rods, coils, 2512 | K |
| Antwerp. Mf. iron, pkgs 13 291 | PISTOIS, CS. T 76 | Rivet rods, coils 259
Wire rods, bdls., 1089 | L |
| Mach'y, cs 8 800
Ptlm., gls., 359,920 26,990 | Revolvers, cs. 4 04 | Coddington T. B. & Co.
Sheet iron, bxs, 251 | L |
| I. P. g as., cs. 3 | Carbines, cs., 2 40 | | M |
| Ag. imp., pkgs 24 1,409 | Arms, cs 0 2.61 | Forg. for axles, 367
Field C. de P.
Pig, tons, 100
Gamon Thomas, | M |
| Sew. ma., cs . 110 4,970
Dutch West Indies. | Tin, bxs 31 18
Stills 2 1,50 | Gamon Thomas,
Tubes, case | M |
| Hdw., cs 5 65
Nails, bxs 10 42 | Hdw. cs 8 Loo | Tubes, case, 1
Great Western Dis. Co.
Tubes, bdl , 123 | 2 |
| Ptlm., gals2,963 319
Mf. iron, pkgs. 9 80 | Cuttery, CS 10 31 | Henderson Bros. | 3 |
| Sew. ma., cs 3 53
Nails, kegs 12 46 | Boiler 1 000 | Hill Edward | |
| Clocks, bxs 7 92 Dutch East Indies. | Iron safe 7 | Lang W. Railoy | |
| Ptlm., gals.240,000 26,400 | Clocks.cs 3 6 | | |
| Liverpool. | Shot, pkgs 27 355
Zine, cks 2 72
Nails, kegs 57 210 | Coils, 1204
Wire, coils, 18 | |
| Clocks, bxs 227 3,799
Mach'y, cs 60 3,813
Hdw., cs 63 3,317 | Revolver, cs i 67
Capstan i 95 | Millikin & Smith | |
| Hdw., cs 63 3:317
Revolvers, cs. 1 790
Pumps, pkgs. 3 405 | Cartridges, es. 4 134 | Wire, bdls., 1703
Wire rods, bdls., 5046 | |
| Rifles, cs 2 718
Mf. iron, pkgs. 5 425 | Azores. Ptlm., gals5,000 544 | McDonald J. R. | |
| Bristol. | United States of Co- | OLD METALS, PAR | , |
| London. 89 1,186 | Stmpd ware, cs 12 425 | The purchasing price | 100 |
| Ptlm., gals. 174,985 13,000 | Sew. ma., cs., 246 5,350 | are as follows : | 60 |
| Hdw., cs 47 1,372
Wire gds, cs 1 40
Tacks, cs 6 159 | Spoons, cs 2 140 | Copper Bottoms
Yellow Metal. | 4 |
| Pi'bg. mtls, pg 44 777
Fin. slabs 730 13,460 | Revolvers, cs. 5 364 | Brass, heavy | |
| Mach., CS 55 4:475
Sew. ma., CS 20 830 | Nails, kegs 42 158 | Lead, Heavy | |
| Revolvers, cse I 69
Mf. iron, pkgs. I 50 | Arms, case I 520 | Zinc | |
| I. r. gcods, cs. 3 45 | Pumps, pkgs. 2 210 | Pewter, No. 2 | N. |
| Tooks on 20 604 | Mf. iron, pgs. 590 5.608
Cutlery, pgs. 137 4.419
Ptlm., gals., 4.509 622 | Zinc. Pewter, No. 1 Pewter, No. 2 Wrought Iron Light do. Stove Plate Machinery do | d |
| Ag. imp.,pkgs 4 250 | I. r. goods, cs. 6 321 | Machinery do | |
| Idw., cs 17 400
Cork. | Clocks, pkgs 25 551
Tinfoil, cs 1 112 | The prices current (p | |
| tlm., gals. 143,614 11,488 | Ag. im., pkgs. 55 921
Iron safe 1 500 | dealers) for Rags, &c., a | 1 |
| ican Colonies. | Cop. rods, cs. 1 123 Beyrout. | Canvas, Linen | |
| Idw., cs 3 66
rig Iron, tons. 50 750 | Ptlm. gals.181,500 20,872 | No. 2. | |
| British West Indies. | Smyrna. | Soft Woolens | |
| Idw., cs 6 41 | Ptlm., gals. 168,000 16,800 | Junny Bagging | |
| 'tlm., gals20,369 2.323 | Nails, bxs r | Jute Butts | |

P. im., gals. 143,500 13,60 Rifles, cs. I. r. goods, cs.

China.

character a stead

Mach'y, pkgs. 14 Cartridges, cs. 14 Arms, cs. . . . 3

Cuba.

Mf. iron, pkgs 812 5,813 Mach'y, pkgs 1,075 32,093 Clocks, bxs... 15 332 Hdw., cs... 89 3,998

The purchasing prices offered by dealers re as follows : Copper, heavy... Copper Bottoms Tellow Metal... Brass, heavy ... Brass, light.... omposition, heavy ead, heavy rought Iron Plate rate Bars The prices current (prices paid by local ealers) for Rags, &c., are as follows: P. D. 3%c. @ 4 c invas, Linen hite Cotton, New hite, No. 1... No. 2... 1 C. 6: 134C. C. 6: 215C. 134C. 6: 2 C. 6: 254C. 2 C. 6: 24 C. 2 S. C. 6: 24 C. Ptim., gals. 20,369 2.323 Nails, kegs, ... 113 612 Mf. iron, pkgs 5 177 Kentucky Bagging Book Stock Venezuela. British Guiana. Ptlm., gals..25,000 3,038 British East Indies. Ptlm., gals.511,020 55,187 PHILADELPHIA. British Possessions Nails, kegs... 34 Nails, pkgs... 9 in Africa. Hdw., cs..... 164 2,159 Mf. iron, pkgs 11 290 Ag.imp., pkgs 163 2,137 Ptlm., gals..37,600 4,473 Brazil. THE AMERICAN IRON TRADE IN 1881. British Australia. Office of The Iron Age, 220 South Fourth St., I PHILADELPHIA, Jan. 2, 1882. Hdw., cs..... 2 151

THE IRON AGE. there been a healthier business done by our iron and steel manufacturers than they have done in 1881. And the year ends with more orders on the books of manufacturers than they have covered when it began and at prices have the proportion for the intervent for the Of Hardware, Iron, Steel and Metals into the Port of New York, for the Week ending Old iron, tons, 96
Thebaud Bros.
Cast iron pes., 1
Whitney A. R.,
Hoop iron, bdls., 100
Wilhamson Jas & Co.
Pig, tons, 100
Order,
Pig, tons, 175
Ore, tons, 703
Old iron, bdls., 3
Old iron, bdls., 3
Old iron, bdls., 3
Old iron, tons 100
Serap, tons, 101
Bars, 1008
Railis, bars, 4012
Tubes, bdls, 37
Spiegel, tons, 500
Oxide, cks., 31
Wire, coils, 546
Sheet Iron, bdls., 512
Tire, forgings, 2
Piston rods. 2
Wire rods, bdls., 57
Bundles 202

Steel.

exhaustion of supplies has removed the de-pression, which had been specially marked in low grades, and the improvement in these was correspondingly rapid when it com-menced. The average quotation for good menced. menced. The average quotation for good No. 3 Forge to-day may be placed at \$24, against \$20 a year ago. The advance in Mill irons has been gradual and without a single reaction, every advance-has been maintained, and the market to-day is stronger than at any time within the past twelve months. Foundry irons are steady, but show less strength in proportion than the

Metats.

Ansonia Clock Co. Cases, 2
Bring Bros. & Co.
Tin, slabs, 375
Tin plates, bxs., 2440
Bond, Parson & Co.
Tin plates, bxs., 3000
Bruce & Cook,
Tin plates, bxs., 1260
Dickerson, Van Dusen
& Co.
Tin plts, bxs., 3793
Ewell J. W. & Co.
Copper, cask, r
Lead, bbl., r
Metal, hbd., r
Hartley & Graham,
Zinc, pkgs, 3
Ketchum E.
Tin plts, bxs., 102
Lalance & Grosjean,
Case, r
Leagarus A. S. & Co, Metata.

er, Blooms, 7285 Rails, tons, 75 Leaf steel, tons, 98 Bars, 1 Wire rods, bdls., 119 lower grades. The question of values is the absorbing topic at the moment, and there probably never was a time in which it was more difficult to arrive at some definite opinion than at present. There are so many contingencies and so many new factors to be taken into account, that even the most sanguine hesitate in giving an opinion. There are certain leading features which may be regarded as of great importance, but it is impossible to predict which of these will develop into prominence, yet there will be developments in course of the next three months which cannot fail to exercise important influence one way or another. It is conceded that both production and consumption are larger Laiance & Grosjean, Case, r Lazarus A. S. & Co. Old metal, cks., 4 Macy's Sons, Josiah Zinc oxide, bbls., 150 both production and consumption are larger than ever before, and that prices, while fairly remunerative, are not unreasonably high. To maintain this position is all that the trade desires, and the fear is almost universal that high prices will sooner or later bring disaster. The immediate course of the market will depend upon supply and demand. Consumption has been beyond all precedent during the past year, and seems likely to be still larger during the year we have just entered upon. Stocks are light, and the of-Zinc oxide, bbls., 150
McGee James,
Tin plates, bxs., 700
Meyer G. A. & E.
Zinc oxide, cs., 5
Zinc oxide, bbls., 35
Pelps, Dodge & Co.
Tin plts., bxs., 17,86
Black taggers, 24
Pratt, Charles & Co.
Tin plates, bxs., 1465
Rump C. F.
Brass frame & c. entered upon. Stocks are light, and the ofentered upon. Stocks are light, and the offerings were probably never more restricted than at present. But this does not by any means indicate absolute scarcity. Production is estimated at about 100,000 net tons Copper, DOIS., 25 Order, Tin plts., bxs., 11,778 Yel. metal, cfs., 92 Old copper, bxs., 2 Taggers, bxs., 153 Tin. ingots, 5 Spelter, plates, 10,666 Spelter, ingots, 3647 per week, and unless consumers have made their contracts for forward delivery, there will necessarily be a good deal of fron on the market from week to week. If they have already bought, so much the less demand for what is offered. It will take some time to develop the position fairly, assuming that no outside influences present themselves. Furnacemen are unusually conservative, and de-cline selling far into the future, while concline selling far into the future, while consumers are anxious to secure stock at present prices for fear of an advance. At the moment, therefore, the market is strong, and while there is no reason to apprehend any decline, it is nevertheless true that a good deal of the strength is due to the general impession that prices are going to be higher. Acting on that idea, prices are sure to advance. As a matter of fact it is probable where the probable of the strength is divance As a matter of fact it is probable where the present there being at this date upward of 940,000 there being at this date upwa rium between supply and demand, if values become unsettled. The question, therefore, narrows down to this, What are the prospects as regards consumption, and what are the resources for meeting it? As regards consumption, we have already stated that ent. Consumers of iron in every direction are full to overflowing with orders for every description of goods. This imparts a feeling of hopefulness and confidence which we are glad to record, and as the years of depres continued longer than was expected, so may the years of prosperity be equally protracted. It is conceded, however, that the bountiful crops of 1879 and 1880 were the foundation

of our present prosperity, and that another direct result was the magnificent earnings of

or abandoned, and the entire trade of the country more or less affected. The stock of market is therefore likely to be a prefit she which were then obtained." that the first half of the year was far from profitable, but in a general way the trade will doubt entire trade will doubt entire the first half of the year was far from profitable, but in a general way the trade will doubt entire trade will doubt entire the first half of the year was far from profitable, but in a general way the trade will doubt entire trade will doubt entire the first half of the year was far from profitable, but in a general way the trade will doubt entire trade will doubt entire trade will doubt entire trade will doubt entire the first half of the year was far from profitable, but in a general way the trade will doubt entire trade will doubt entire trade will doubt entire trade will doubt entire trade will doubt the form and steel industries, as last a fready been indicated, but coupled with some doubt doubt the prosperity which they end the lesses will make the property which they end they are the body and they are the stock have foreshadowed the general way the trade will doubt the year. It is almost too much to hope that we can be blessed with another year of such was continued during: 1570. Early in the year, the second was a sever, simply because found fairing they are the way of the year than the property as that which is just closing. We do not say that there are benefative was partially was a prediction in the iron trade caused which was more than the general financial situation.

The result was continued the soundness of the profit was partially was a sever, simply because found fairing the encrouse amount of the was a fair that the way to subject the way in the property of the profit was partially was a seven, simply because found fairing the encrouse amount of the profit was partially was a seven simple the way of the profit was partially was a seven simple the was a fair that the profit was partially was and was a seven as solid foundation. The inference seems to be warranted that good crops make large railway earnings; these make a good demand for iron manufactures, and these, in turn, make a heavy demand for Pig Iron. As to production, we have already stated that it has for some time been a little short of consumption, and the seem a little short of consumption, and there has been a slightly easier market, and 3.35¢ has been named in several important transactions. The year opens favorably; manufacturers are full of orders and there tion, we have already stated that it has for some time been a little short of consumption, and it is extremely doubtful if it can be increased materially, unless stimulated by high prices. The cost of production is high, ores are scarce, and new furnaces will find it extremely difficult to obtain supplies unless at almost prohibitory prices. Still there are other sources of supply, and with the vast amount of Pig Metal waiting for buyers in Great Britain, there need be no fears of an iron famine; the danger lies in the fear of one. This we regard at the moment as the only real difficulty which has to be met. In case it becomes necessary to import 500,000 tons of Pig Iron, there is a sudden rush to secure several months' supply within 20 or

each reacting on the other, until prices are run up several dollars per ton, and the market loaded with iron at high prices and no demand for it. So far the action of the trade has been most conservative, contracts to run 60 or 90 days the rule, and prices in many cases left open until a few days before the month of delivery. Thus, for instance, two or three of the most prominent compa-nies have fixed \$23, at furnace, for January, the rate for February to be named hereafter. Consumers adopt the same plan, and a good many orders for Finished Iron have been entered on similar terms, viz: price to be fixed at time of delivery. This checks spe-culation, and places the market squarely on its merits. If there should be a scarcity, and a competition to secure iron, prices will be marked up, otherwise not. This is not be marked up, otherwise not. This is not satisfactory to many legitimate buyers, but to the trade at large it is probably a decided advantage, as it prevents stocks being with drawn from the market for speculative pur-poses. At the moment the course of the British markets will probably exercise a controlling influence upon prices here. During 1881 shipments of Pig Metal to the United States aggregated about 450,000 tons (chiefly Bessemer) and although consumption in Great Britain largely increased during the year, stocks of Pig Iron show a steady gain, there being at this date upward of 940,000 tons on the market of Scotch Iron alone. were 425,000 tons, while the imports during the year reach about 450,000, total supply in round numbers 5,375,000 tons. Stocks in store are about exhausted, so that the estimate of 5,000,000 consumption is not likely to be far astray. Taking a retrospect of the entire field, we fail to see anything to warrant any creet advance in prices, and in warrant any great advance in prices, and in fact any advance which lets foreign iron into the market cannot be of long duration. The year opens with an active demand and great strength as regards prices, but the outlook is too uncertain to warrant confident predictions as to the future. If speculation can be kept in check, there is reason to hope for another prosperous year, but with speculation the experience of 1880 is likely to be repeated, without being followed by such a recovery as was experienced during 1581.

Manufactured Iron.

direct result was the magnificent earnings of the transportation companies. If this is true, continued prosperity must rest upon similar foundations; hence the crop prospects for 1852 will be of the most vital importance. The past year was not a success as regards the crops generally, and the volume of exports show a serious decline. This is in some measure offset by the im-mense tide of immigration and the heavy in-vestments of foreign capital, but it may be taken for granted that the measure of pros-In all descriptions of finished iron the demand has been extraordinary, and consumption beyond all precedent. During the first half of the year Bar iron was steady at 2.4¢—that quotation, in fact, was maintained from August, 1880, to August, 1881. During March and April prices were weak, and competition for business resulted in concessions been, too, a year of uniform prosperity—not characterized by spurts and reactions, but by a steady demand at good prices in every month. The production of the year is far in advance of that of any previous year, and it has all gone into consumption. Never has

can be had, but if there is a sudden rush to secure several months' supply within 20 or secure several months' supply within 20 or 30 days, prices are bound to be affected.

An American demand would stiffen the promptness. Prices have shown steady improvement during the entire year, and show provement during the entire year. creasing, and manufacturers hope to be able to meet calls upon them with reasonable promptness. Prices have shown steady iman advance of about 6-10ths on Angles, and from that to 1¢ on Beams, Channels and Tees. Sheet Iron.

This department has, without exception, been crowded with work throughout the entire year. The demand has been beyond precedent, and, although a large output has been made, stocks are exhausted, and con-iderable difficulty is anticipated in meeting the demand during the coming year. Price have been firm and steadily hardening, sale during last week showing an advance of about 10 1 th as compared with the corres ponding week a year ago. Manufacturers claim that business has been only moderately remunerative, owing to the loss of time dur ing the summer months. They were loaded rith orders entered early in the season, and when higher prices were established their ntire time was employed on old contracts. Prospects are considered exceedingly favor able for the coming year, and, as we have said, contracts for large lots are being made at an advance of about 16 7 b over rates current this time a year ago.

An enormous business has been done in Rails during the past year. Production during 1881 is estimated at 1,700,000 gross tons, to which must be added imports of nearly tons (iron and steel), making a total supply for the year of about 2,000,000 gross tons Prices have been remarkably steady, the general quotation having been \$60 at mill, almost without deviation. In some cases \$2 or These and in others similar concessions were luction. It made for deliveries at sellers' option. Next vance. As a matter of fact it is probable that consumption is somewhat in advance of production, and the steady, hardening prices due to the shrinkage in supplies. This, however, does not indicate further advances. High prices may check consumption, as they will undoubtedly stimulate production, and it will be found difficult to maintain an equilibrium between supplies that the consumption in the United States during 1881 will reach about 5,000,000 gross tons. Mr. Swank estimates production at 4,500,000 tons. High prices may check consumption, as they will undoubtedly stimulate production, and it will be found difficult to maintain an equilibrium between supplies of the production at 4,500,000,000 tons. Stocks of foreign in store a year ago made extensive additions, besides two or three entirely new concerns that have been, will be shortly out in coveration. It is Mr. Swank striking features of the year. The output striking features of the year. The output can be largely increased, if necessary, during 1882, several of the leading mills having made extensive additions, besides two or three entirely new concerns that have been, or will be shortly, put in operation. It is quite probable, in fact, that the capacity of quite probable, in fact, that the capacity of Pennsylvania alone will reach 1,000,000 tons per annum by midsummer. It is clear, therefore, that there is very little necessity for importing rails, and henceforth manufacturers will endeavor to supply the market from domestic sources. Prices are being cut down so as to meet outside competition, and it is understood that \$2 to \$3 concessions have been made in recent transactions. It cannot be said that the outlook is free from per plexities. The vast consumption of the past two years can hardly be maintained, although two years can hardly be maintained, although the ability to meet such a demand is stronger than ever; in point of fact, the key to the entire position of the Iron trade is likely to be found in this direction. If the steel works can be kept busy, other branches wi be. There is some little uncasiness felt in regard to re-sales, which are regarded as indications that deliveries are not taken as promptly as was expected. This may be only temporary; but in the meantime, parties with cash behind them can obtain better terms than was thought possible a little while back, and the feeling inclines toward weakness. The imports o Steel Blooms for the year will aggregat

the entire year, either on Steel Blooms or in re-rolling Iron. Prices have been uniform steady, \$47 being the quotation during alm Prices have been uniformly the entire year—varying probably \$1 \$\ \text{2} too on large orders, according to the price of ma-terial, \$46 being the lowest quotation and \$48.50 the highest for standard Rails—the great bulk of business having been done at an average of about \$47 at mill. The outlook in the Iron Rail trade is not encouraging many of the mills having virtually abandone the business, and are now employed on Mer-chant Iron, Steel Blooms, or such small orders as may be offered from time to time for Iron Rails. The general opinion is that competition with Steel Rails is impossible, and that the day for Iron Rails has passed.

Old Rails, This branch of the Iron trade has been edisappointing one during the entire year. disappointing one during the entire year. Prices opened in January at \$27 for Flanges, and steadily advanced until \$28.50 was realized in February. Early in March a slight reaction set in, and a decline of about 50% of the month, which was followed by \$1 decline during April, and still another \$1 during May. Prices in June opened at about \$20, and at times the market gave indications of improvement, but finally settled back to \$25.50 (3) \$26. During July prices steadily improved, selling up to \$27 before the close of the month, improved still further during August, and before the close of September sold at \$28. A further advance was made in October and November, sales having been made as high as \$30. During December the market reacted and prices became very irregular. D. H.'s were sold as low as \$30, and T.'s at something below \$29. The demand is extremely small, and although stocks in sight are only trifling, it is impossible to effect sales without making concessions. One reason is, that offerings of American Rails at interior points are larger than for some time past, and another, because of the falling off in the demand for re-rolling purposes. The year opens with prices nominally \$20.50 for T.'s and \$30.50 for D. H.'s, but with very little disposition to buy. were sold as low as \$30, and T.'s at something

PITTSBURGH.

[By Telegraph.] PITTSBURGH, PA., January 4, 1892.

A meeting of the Western Iron Asso ciatio was held in this city to-day. The attendance was large, fifty mills being represented. The situation was fully discussed, and the motion to affirm the 21/2-cent card was carried almost unanimously. The meeting adjourned for three weeks.

Office of The Iron Age, 77 Fourth Avenue, 1 PITTSBURGH, PA., Jan. 3, 1889.

The advent of the new year finds all our The advent of the new year finds all our great manufacturing interests in good condition, much more so than at the opening of 1881, and the prospect is that 1882 will, so far as trade is concerned, exceed that of any former year in the history of the country. So far as relates to our great interest, that of Iron, the actual volume of business from July to January has been unprecedented; every mill has been worked up to its utmost capacity; yet, but few, if any, of the mills were able to close the year with their order books cleared.

The meeting of the Western Iron Association, which takes place here to-morrow, will, it is expected, be largely attended, and its action in regard to the card is looked for with a good deal of anxiety. It is reported now that the Cincinnati delegates will vote solid against any change. On Wednesday week, the regular monthly meeting of the Western Nail Association takes place, and it looks as if prices would be put up at least 25 cents

Pig Iron -We have to report a continued strong market, and prices have gone up another 50 cents per ton, but the demand is another 50 cents per con, but the definant is not as active, apparently, as it was a week ago. While the mills, almost without excep-tion, have a good deal of Pig bought to arrive, many of them, owing to the difficulty, in getting it forward for want of cars, have been obliged to go on the market and buy or else stop their mills, and it was this as much if not more than anything else that started this recent spurt. As a rule, it is only those whose necessities are urgent that are buying at the advance, and the indications are that, for the present at least, the highest notch has been reached. Special reports were sent has been reached. Special reports were sent from here a week ago to various parts of the country, and a cable special appeared in the London Times of Dec. 27th, stating that the Pittsburgh market was active and excited, and that Forge Irons were selling readily at \$27.6 \\$27.50. That the market was more active at the time in question is admitted, but there was no particular excitement, and the prices quoted are from \$1.50 to \$2.00 per ton higher than the sales warrant. It looks very much as if these reports were sent out for a purpose, and if so the author or authors should be exposed; if not they must have been gotten exposed; if not they must have been gotten up by some one who was not well informed, Scrap I are many of the articles that appear in the daily papers in regard to the Iron business. Forge Iron may be quoted at \$25 @ \$25.50, 4 mos., for Neutral, and \$26, 4 mos., for do. Cinder Mixture Red-short. Bessemer, \$28 @ men nolding for \$30 and refusing to accept less. Foundry grades \$26, 4 mos., for No. 2, and \$28 for No. 1. The above quotations show an advance of \$2 @ \$3 per ton within the past sixty days, and while a still further rise is possible, the feeling obtains just now that the market will settle down, as the consumers are pretty well supplied, and many of them are resulted to accept the set of them.

Manufactured Iron.—There is plenty of business offering, as there has been for several months past, but as stated in last two or three reports, manufacturers have been refusing to book any new orders for some time past, ex-cept with the understanding that delivery is to be made at their option and the price to be market rates at time of delivery.

Nails.—While there has been no change nade in the card, it is doubtful whether an order for a round lot would be placed at present prices. The Nail interest never was in better condition, so far as manufacturers are concerned; stocks are light, not only here, but at Wheeling and elsewhere, while the demand this year promises to exceed that of the one so recently closed.

Wrought Iron Pipe.—The demand has fallen off somewhat within the past few weeks, but the mills are all very busy on old contracts. Card and discounts remain unchanged; 55 to 57½ % on Gas and Steam Pipe, and 37½ % on Boiler Tubes. Oil Well Casing, 85¢ p foot, net; ditto Tubing,

Rails, &c .- There have been no sales of Steel Rails reported here recently, in the absence of which we omit quotations. Railway fastenings firm, with a good deal of inquiry, and it looks as if higher prices in the near future were likely to prevail, in sympathy with the enhanced cost of Iron; Spikes are still quoted at 3¢, 30 days, but no large lots would be contracted for at this price; Splice Bars, \$2.60 @ \$2.80; Track Bolts, 4\$ @ 41/4\$.

Blooms and Billets.—Bessemer Rail Blooms are quoted at \$46 @ \$48, and Billets at \$63 @ \$65, with but few offers to sell and a good deal of inquiry.

Steel .- We continue to quote best brands of Refined Cast Steel at 11¢; Crucible Machinery, 6½¢; Bessemer and Open-hearth ditto, 5¢; Bessemer Spring, 4½¢; Openhearth ditto, 4½¢; Steel Boiler Plate, 6½¢

Scrap.-There is a fair business, and Scrap.—There is a fair business, and prices are firmer, in sympathy with Pig Iron, but without quotable change. Wrought Scrap, \$30 @ \$32 % net ton; sales of Crop Ends at \$30 @ 31 % gross ton, and Old Carwheels at \$31 @ \$32; Car Springs and Axles, \$38 @ \$40 % net ton; Wrought Turnings, \$20 @ \$21; Cast Borings, \$16 @ \$17,

Window Glass .- There are but few new orders. Some of our manufacturers are still working on old contracts. No change in card or discounts

Coke.—Scarcity of cars is the great source of complaint on the part of Coke makers, for want of which many of them are unable to meet their engagements, and consumers are almost as much annoyed as producers. Prices firm, \$1.70 @ \$1.80, free on cars at ovens; 15¢ @ 25¢ \$\text{ ton additional for small foun-

CHICAGO.

Office of The Iron Age, 36 and 38 Clark Street, cor. Lake Street, CHICAGO, Dec. 31, 1881.

Pig Iron. - No change has as yet courred in this market, the general belief occurred in this market, the general belief among dealers being that the price of Pig Iron will be advanced within the next 60 days from \$1 to \$2 per ton over the present quotations, and that the same will be sustained. Inquiries are numerous. We quote: Lake S. perior Charcoal, Nos. 1 and 2, \$31; No. 3, \$12; Nos. 4, 5 and 6, \$33 @ \$34. Calumet, \$28 @ \$29. Silvery Soft, \$26 @ \$27. Crane, No. 1, \$29; No. 2, \$28.50. Thomas, \$28.50 @ \$30. Imported Scotch, \$30 @ \$31, and American Scotch, \$27 @ \$30.

Manufactured Iron.—The demand for Morchant Iron continues active, with no change in prices. We quote: Bar, 3¢; Angle, 4¢; T, 4¼¢; Beams and Channels, 4¼¢ @ 4½¢; Hoop at 3.80¢ rates. Sheet, Plate and Tank, which latter is very scarce, as follows: 10 to 14 gauge, 4¢; 15 to 17 ditto, 4.30¢; 18 to 21 ditto, 4.60¢; 22 to 24 ditto, 4.80¢; 25 and 26 ditto, 5¢, and 27 ditto, 5.20¢. Patent Cold-rolled Shafting, dis. 20 %; Norway Iron, Original Bars, 5¢ rates; Norway Iron, re-rolled, 5¾¢ rates; Ulster Iron, 4½¢ rates; Low Moor Iron, 8¢ rates; Nuts and Washers, 7¼¢ off list; Wrought Boat Spikes, 4¢ rates.

Nails.—Demand is good, stocks fair and Manufactured Iron.-The demand for

Nails.—Demand is good, stocks fair and market firm at \$3.40 for 10d. to 60d. in carload lots, and \$3.50 for smaller orders.

Scrap Iron.—Quotations remain un-changed, while the inquiry is rather dull, due to the fact that mills are closing up the year's business. The indications point to a revival of trade in the near future. We quote dealers' purchasing prices as follows:

No. I Wrought Scrap, \$24 (\$\text{25}\$, net ton;

No. I Pailmood Scrap, \$23 (\$\text{35}\$) ditto

the cubanced cost of Pig Iron, it should bring favor another advance in the Northern mar-more money. favor another advance in the Northern mar-kets, and this market always follows those in machinery. We quote:

a rather slow and conservative way. V quote: No. I Foundry, \$25 @ \$27; No. Foundry, \$22 @ \$24; Gray Forge, \$20 (\$21; White and Mottled, \$19 @ \$20; Can \$21; White and Mottled wheel Metal, \$38 @ \$40.

Ores.-Movements now on foot look to the proper opening of very large beds of Ire Ore at various points near transportation lines, and combination may soon succeed to competition, as is now the case with the Northern Ore supplies. Prices here remain steady. We quote: 50 % Brown Hematite, per ton, \$2 @ \$2.75; Red Fossil, \$2 @ \$2.25, delivered at furnace.

Miscellaneous Articles.-We quote Old with the advance in Mill Irons. Wrought Scrap, \$24 @ \$27; Cast Scrap, \$14 @ \$17; Old Wheels, \$28 @ \$30.

Nails—Are steady at \$3.25 rates, and mills are pressed to fill orders.

Manufactured Iron.-There is not much prospect here apparent that the contemplated advance in Bar by the Pittsburgh makers and dealers will be followed; our millmen seem to think they have a good enough business as it has been going for the last two or three months. They are at least disposed to be conservative, having found booms the reverse of profitable. We quote Bar strong at \$2.75 rates; Railroad Spikes, \$3.30; Track Bolts, \$4.25; Fish Plate, \$3.

Coal.-Fancy Lump, \$5 net ton; Common,

Cole.—Fancy Lump, \$5 net ton; Common, \$4.25; run of mine, \$2 at mills.

Coke.—Furnace Coke, \$3 at point of consumption; Foundry, 10¢ @ 12¢ % bushel.

Steel and Iron Rails.—Steel Bars, \$62 @ \$64 at mill; Iron, \$50 @ \$52; Small, \$57

BOSTON. DECEMBER 31.-The tone of the Boston

DECEMBER 31.—The tone of the Boston market is reported very strong and there is a very good trade for this season of this year. During this week, the last of the year, there is, of course, a holding off from buying, but it is stated that after the first of Januar but it is stated that after the first of January the demand is expected to be very good and that prices will go somewhat higher. It is a fact that the available stocks are small and that the furnaces express their distrust of the future condition of affairs by refusing to accept long contracts. And again, the for-eign market is reported firm and rising, and in view of these facts it would not be surpris-ing if a mild boom were to set in. We advance ing if a mild boom were to set in. We advance our quotations slightly. Prices at shipping ports for American pig are \$25,50 @ \$27 for No. 1 X; \$24 @ 24.50 for No. 2 X, and \$22.50 @ 23.50 for Gray Forge. Small spot lots command \$2 @ \$3 per ton above these quotations. The feeling in Foreign Iron here is very firm, but the market is quiet. The English and Scotch markets are reported firm. The stocks here are light, and there is firm. The stocks here are light, and there is firm. The stocks here are light, and there is a tending toward higher prices. We quote Eglinton at \$24 for moderate-sized lots; Langloan, \$27; Gartsherrie, \$26; Carnbroe, \$24.75 @ \$25; Glengarnock, \$25; Clarence No. 3, \$22 @ 22.50; Shotts, \$27. Old Rails.

—There is but little doing in old rails. We quote \$31 @ \$32 for American and \$30 for foreign. Manufactured Iron.—The closing of the year has caused trade to fall off somewhat, but it still may be said to be active for the season. Plate Iron is noticeably so and in consequence the prices have advanced. The foreign market for manufactured iron is reported very firm, and cable advices state that after the first of January an advance of about 10/ is anticipated. Bur Iron.—The Bar Iron trade is reported very good for the season and the mills have still enough orders to keep them busy for some time to come, in some cases, it is claimed, as long as three months. The market is firm at quotations. We quote \$2.90 @ \$3 for Bar. Horseshoes We quote \$2.90 (@ \$3 for Bar. Horseshoes remain very scarce and very much wanted at \$4.33 per keg. Swedish and Norway are very firm at \$4 for Bars and \$4.75 (@ \$5 for Shapes. Plate Iron.—An advance in Plate Iron has been made in consequence of the active demand and the inability of the mills to deliver as fast as wanted, they being growded with orders for some time to come crowded with orders for some time to com We quote Tank at 31/¢; Refined at 41/¢ we quote lank at 34 %; kenned at 44 %; Shell at 42-5¢; Flange at 5 7-10¢, and Tubes very firm at 37½ % from list. Sheet Iron.

—There is a good demand, and quotations remain unchanged. We quote Sheet Iron, 4½¢ @ 4½¢; ditto Refined, 5½¢ @ 5½¢; Galvanized, 8½¢ @ 11½¢; Russia, 11¢ @ 12¢. Steel.—The demand for Steel continues steedy, and prices are firm and without 12¢. Steel.—The demand for Steel continues steady and prices are firm and without change. We quote: Best English cast, 14¢ @ 15¢; American ditto, 12¢ @ 12½¢; Bessemer Machinery, 5¢ @ 6¢; Wedge and German, 7¢; English Spring and Calking, 7¼¢ @ 7½¢; ditto American, 5½¢ @ 6¢; Tire, 4¢ @ 4½¢; Sleigh Shoes, 3½¢ @ 3¾¢. Nails.—The demand is rather quiet at present, but prices are firm. We guote \$2 0 @ \$2 co. but prices are firm. We quote \$3.40 @ \$3.50 for tens per cask. Copper.—There is a quiet market for Lake Ingot, and prices are about market for Lake Ingot, and prices are about the same, with 2014 asked, and sales can possibly be made at 2014. The prices of manufactured Copper remain unchanged at the recent advance. We quote: Sheathing, manufactured Copper the recent advance. We quote: Sheatning, 28¢; Braziers, 30¢ @ 32¢; Bolt, 30¢; Cop-28¢; American Yellow 28¢; Braziers, 30¢ @ 32¢; Bott, 30¢; Copper Bottoms, 31¢ @ 32¢; American Yellow Sheathing Metal, 20¢; Yellow Metal Bolt, 22¢; English Yellow Sheathing Metal, 16¢ in bond. Lead.—Lead is quiet and quoted at \$5.15 @ \$5.20 for carload lots, and in a jobbing way at \$5.30 @ \$5.50. Manufacturers prices are unchanged. We quote: Bar, 6 1/4 Pipe, 7½¢; sheet, 8¢; Tin-lined Pipe, 15¢; Tin Pipe, 35¢. All less 10 %. Spetter.—The market is firm and the demand good with scarce supplies at 61/4¢ @ 61/4¢ for large lots. Sheet Zinc is in good demand at 8¢ @ 81/4¢. CHATTANUUGA.

CHATTANUUGA

The market will settle down, as the consumers are pretty well supplied, and many of them are now in a position to hold off for a time, and besides this, the furnacemen are doubtful about the wisdom of attempting to put prices any higher, for the present at least.

Muck Bar—Continues very scarce, and in sympathy with the raw article prices are firm and tending upward. At present prices, it is claimed by those who are in a position to know, Muck Bar cannot be worked into ordinary Merchant Iron and afford the mill owner anything. We can report a sale into ordinary Merchant Iron and afford the mill owner anything. We can report a sale in contracting further for future delivery.

CHATTANUUGA.

CHATTANUUGA

Office of The Iron Age. Market and 8th Sts. 1, 2 is 182. The sales of Billiton are reported to have been made at a parity of 25½%. Tim Plates.—There is a parity of 25½%. Tim Plates.—There is a good demand reported but the tone of the market is somewhat easier. We quote: Charcoal Bright, \$6.75 (@ \$; Terribes at \$6 (@ \$; Cokes, \$6; ditto Ternes, \$5.50 (@ \$; Cokes, \$6; ditto Ternes, \$5.50 (@ \$; Cokes, \$6; ditto Ternes, \$5.50 (@ \$; 5.50 (d Iron.—There is a little more inquiry for Scrap, and additional buyers are but not sales of Horseshoes at in contracting further for future delivery.

This hold firmly, at 24½% for large lots and 25% in a jobbing way. The sales of Billiton that could reasonably be expected.

This is hold firmly, at 24½% for large lots and 25% in a jobbing way. The sales of Billiton to the other lone of the holidays, and prices are somewhat easier. We quote: Charcoal Bright, \$6.75 (@ \$; Terribes at \$5.50 (@ \$; Terribes at \$6.55 (@ \$; Terribes at \$5.50 (@ \$; \$5.50 (@ \$; \$5.50 (@ \$; \$5.50 (@ \$; \$5.50 (@ \$; \$5.50 (@ \$; \$5.50 (@ \$; \$5.50 (@ \$; \$5.50 (@ \$; \$5

| e | Wrought, No. 1 \$1.35 @ \$1.40 |
|---|--------------------------------|
| 2 | " light 55 @ |
| | Horseshoes @ 1.50 |
| I | Hoops 90 @ 1.00 |
| ı | Cotton-tie Buckles 2.50 |
| ı | Car Wheels per ton |
| ı | Car Axles |
| ı | Spring Steel 11/4 @ 13/4 |
| | crap Steel @ 1.20 |
| ı | tove Plate 75 |
| l | fachinery 90 @ 1.00 |
| ı | urnings, Wrought 60 60 70 |
| | 'urnings, Cast 45 @ 50 |
| | falleable Iron 45 @ 50 |
| | Burnt Iron 30 @ 46 |
| | - Journal of Commerce |

LOUISVILLE.

W. D. BELENAP & Co., Iron and Steel Merchants, Nos. 113 and 115 Main street, report to us as follows, under date of Dec. 31, 1881: The market for Bars is firm, and for two days past has shown unmistakable signs of excitement. Withdrawal of quotations on all sides, and the refusal to book orders on all sides, and the rerusal to book orders except at prices ruling at time of delivery, indicate extreme caution on the part of manufacturers; the eagerness to cover for January and February wants on the part of buyers shows a confidence that takes all the risks. Mills are so full that they are very independent about the future. The more conservaent about the future. The more conserva-tive ones dread a move that seems to be imminent to rush the card up to \$2.75 or \$3 even, for they will then be paying on a basis out of proportion to what they are getting for their product. Bars are jobbing from store in fair lots at \$2.75, though to wholestore in fair lots at \$2.75, though to whole-sale buyers concessions are made. Sheet is moving in a quiet way, holding its own very well. There is no great inquiry for it. Nails are scarce at full card, nearly all the mills refusing orders at present prices. Immediate demand is lighter on account of cold weather. General business is good, with every prospect for its being better.

Messrs. Geo. H. Hull & Co., commission merchants, report to us as follows, under date of Dec. 30, 1881: The tendency of the market is still upward. The demand is very light, as is always the case at this season of the year, but notwithstanding this a further advance of \$1 per ton has been established

| on Mill Irons by actual sales. | b |
|--|---------|
| POUNDRY IRONS. | 100 |
| No. 1 Hanging Rock, Charcoal \$29.00 @ 30.00
No. 2 | h |
| No. 2 " 14 14 94.10 @ 25.00 | 01 |
| No. 2 Hanging Rock, Stonecoal and Uoke 27.03 \$27.50 No. 2 Hanging Rock, Stonecoal and | 2/
S |
| Coke 95.00 @ 26.co | a |
| No. 1 Southern, Stonecoal and Coke 26.50 @ 27.00 | th |
| "American Scotch" 24.00 @ 25.00 | m |
| Scotch | st |
| MILL IRONS. | it |
| No. 1 Charcoal, Cold-short and Neu- | th |
| tral | CI |
| and Neutral 24 50 25.00 No. 2 Stopecoal and Coke, Cold-short | Ir |
| and Neutral | la |
| White and Mottled, Cold-short and | in |
| Neutral 20.00 @ 22.00 | qu |
| CAR WHEEL AND MALLEABLE IRONS. | al |
| Hanging Rock, Cold-blast | th |

Hanging Rock, W. B. 30.00 33.00 CINCINNATI. January 2, 1882.—Pig Iron.—Euring the week there has been less inquiry for Foundry grades. Charcoal Car-wheel kinds are being sought for delivery through the coming year and are readily found at former quotations. The inactivity in Forge kinds has changed to activity, and sales have been made at prices meeting the views of the makers. Stocks of all kinds of Pig Irons are very light as compared with this time last year, with a firm market at an advance of about \$4 per ton on Charcoal, Coke and Stonecoal Foundry and Mill Irons. This advance in prices, it is thought, will surely cover the additional cost of production last year. This increased cost has originated mainly from the higher wages of labor in all the departments incident to the production of Pig Iron throughout the West and South. Present prices can be sustained, and the Western and Southern Irons enjoy their usual and natural markets as against the Eastern American and foreign as against the Eastern American and foreign makes. Both producers and consumers watch closely the reports of the Eastern American and foreign markets, and are not slow to avail themselves of the information. The present low rates of freight by rail from the seaports is a large factor in determining as to what prices can be made and sustained on Western and Southern Pig and Bar Iron. The following quotations of prices are very firm; no considerable quantity can be had on firm; no considerable quantity can be had on them: Hanging Rock Charcoal Foundry, No. 1, \$29.50; Good, \$29; No. 2, \$29; No. 1 Coke, \$28; No. 2, \$27; Virginia, \$27 @ \$26; Alabama, \$26 @ 25; Hanging Rock American Scotch, No. 1, \$27.50; No. 2, \$26.50 Silver Grey Softeners, No. 1, \$26.50; No. 2 \$25,50; No. 3, \$24,50; Forge Irons, \$24,50; &\$25,50; No. 3, \$24,50; Forge Irons, \$24,50; &\$28; Cold-blast Charcoal Car-wheel Irons, \$35 @ \$38; Warm-blast, \$30 @ 37; Bar Irons, \$2.70, card rate. Scrap: Wrought, \$1.10 @ \$1.40; Cast, 60\$ @ 90\$ \$7 100 lbs; Old Car Wheels, \$28 @ \$30; Rails, \$28 @ \$30; Rails, \$28 @ \$30 P ton of 2240 lbs.

BALTIMORE.

W. N. WYETH, Iron and Steel Merchant, 46 and 48 South Charles street, reports us the following, under date of Dec. 31, 1881: With the close of the year we find trade in a most remarkably healthy condition, with every indication of higher values ruling in Sheet Zinc is in good demand at 8¢ @ 8½¢. the near future. Stocks are low and greatly reduced, with demand in excess of prompt Tin is held firmly, at 24½¢ for large lots and 25¢ in a jobbing way. The sales of Billiton Tin are reported to have been made at a

late advance in Mill Iron in the Eastern and larger markets, and the decidedly "bullish" reports from those points, do not seem to materially change the views of makers or rensumers, as reflected in last week's report.

The week has been bare of notable transactions, and generally devoid of interest.

The quotations of last week fairly represent this market, with the exception that Neutral or Cold-short Mill Irons may be quoted from \$1 to \$1.50 higher.

| | HOT BLAST CHARCOAL. |
|---|--|
| | Missouri |
| l | COAL AND CORE. |
| | Missouri None offering |
| | Ohio |
| | MILL IRONS. |
| | Red-short |
| | CAR WHEEL AND MALLEABLE IRONS. |
| | Missouri 28.00 @ 34.00 Southern 35.00 @ 38.00 Ohio 32.00 @ 43.00 |
| 1 | 31100 (1) 43100 |

Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

> (From our Regular Correspondent.) LONDON, ENG., Dec. 19, 1881.

THE WEEK

has not been characterized by many symptoms of change, and has in most respects been free from excitement. As will be per-ceived by other sections of this communication, there have been fluctuations in one or two descriptions of crude iron, but these variations, somewhat curiously, have been in opposite directions. Scotch warrants, for xample, have become a shilling or so weaker, under the influence of realizations by those who had bought for the rise. Makers' brands of Scotch pig, on the contrary, have grown about a shilling dearer. West Coast grown about a shilling dearer. West Coast hematites are 1/6 @ 2/6 per ton higher, and Northamptonshire, Derbyshire and other ordinary sorts of crude irons have become 2/6 @ 5/ per ton stiffer. Even in South Staffordshire this appreciation of values is apparent. It is, therefore, fully demonstrated that the course of Scotch warrants at the moment is in no sense a true index of the state of the British iron market. The fact is not by any means an exceptionable one, yet tis probably of greater significance just now to to the state of arge and prices are sustained, but not expandng; in Scotland stocks are enormous and open and open quotations are weaker. I suppose a reasonable deduction from these facts is that where the reserve stocks are abnormally large the market must be kept in a weak and uncertain condition thereby. Another inference may be drawn, I am aware, but this one seems to commend itself to most of us. Speaking of be drawn, I am aware, but this one seems. To commend itself to most of us. Speaking of stocks reminds me that the annual statistics of production, disposal and stocks left unsold will probably be issued by the Scotch Ironmasters' Association on December 27th or 28th. The figures thus promulgated will have some bearing upon the course of prices in the near future, albeit they will not materially affect the actual volume of business. In some quarters the statistics are awaited with much impatience, one might almost say anxiety, and there is the customary amount of speculation in warrants on tomary amount of speculation in warrants on the strength of the returns being found more favorable than it is now anticipated they will be. The only point about which there is anything like secrecy is as to makers' own holdings. We know that there are 626,000 holdings. We know that there are not know tons in Connal's stores, but we do not know whether the report that makers have 339,000 whether the report that makers have 339,000 tons in their own yards is correct. In any case it is assumed that we shall end the year with balances of pig iron something like

Scotland.
Cleveland.
West Coast.
Lancashire, South and West York-hire,
Lancashire, Lincolnehire, Northamp-Derbyshire, Lincolnehire, Northamp tonshire, Warwickshire, Staffordshire Worcestershire, Shropshire, Mon mouth and North and South Wales. Total...... 1,765,000 This will be a heavy aggregate of sold materials with which to commence the year 1882, yet it may be borne in mind that large stocks are not necessarily inimical to trade progress. That idea is supported by the fact that at the end of 1870 there were 665,000 tons in Scotland, and in 1871, 490, oco tons left over, yet 1871 and 1872 count among the most prosperous years the iron trade has ever known. In a general way, however, a bulky "carrying forward" tends to repress business and depresses prices in the succeeding year, unless counteracted by an unusually large demand. At the end of the following years stocks on hand in Scot-land have been as under:

These figures demonstrate that in any case we shall start 1882 with vastly heavier stocks than ever before known. What the total pig iron production may prove to be this year will not be positively ascertained for some weeks, perhaps months. In 1880 it was a trifle over 7,721,000 tons, an increase of 1,712,399 tons over 1879. This year the aggregate make will, in all probability, reach 8,500,000 tons, or even 8,750,000 tons. On the other hand, the shipments will show a slight decrease, which will not be counter-balanced by the increased home consumption, thus leaving the larger reserve stocks al-ready alluded to. In other lines, such as ore raising, rolled iron output and Bessemer pro-

duction, the returns for 1881 will largely exceed those of any former year.

Leaving these interesting questions, how-ST. LOUIS.

Messes. Hopper, Plum & Co. Pig Iron and Iron Ore merchants, 417 Pine street, write us, under date of Dec, 31, 1881: The



After having made almost every kind of a Bit Brace and tried them on the market, we find that our BARBER IMPROVED BRACE, as seen in this Cut, is the only one which gives universal satisfaction. During the past six months we have made some slight changes on this Brace, which remove all objections to it and make it absolutely perfect. We are aware that other Braces are sold at a less price, but they are also made at a less cost. Everything which goes into the Barber Brace is of the best and most expensive quality, and one of them will outlast six of any other kind. The Sweeps and Jaws are of steel, the Head of lignumvitæ and Revolving Handle of rosewood. It is highly polished and heavily nickel plated. The Jaws will hold, without any fitting, Tool Shanks of every shape, including Round Twist Drills. When furnished with the Ratchet Attachment, for boring in places where the Sweep cannot be revolved, it is the only Brace which will answer that purpose. We have not changed the price for many years, and do not anticipate any change in the near future; but from year to year we have been adding to the quality so as to make the cost to us double what it was ten years ago. We have recently added to our manufacturing facilities, and are now prepared to supply the world with Braces. After having made almost every kind of a Bit Brace and tried them on the market,

LIST PRICES.

No. 10—14-inch Sweep, per dozen...\$33.00 No. 14— 6-inch Sweep, per dozen....\$21.00 No. 11—12-inch Sweep, per dozen... 30.00 No. 31—12-inch Sweep, per dozen... 39.00 No. 12—10-inch Sweep, per dozen... 27.00 No. 32—10-inch Sweep, per dozen... 36.00 No. 13— 8-inch Sweep, per dozen... 33.00

MILLERS FALLS CO., 74 Chambers St., New York.

HEATON & DENCKLA HARDWARE CO., Hardware Commission Merchants,

507 Commerce Street, Philadelphia.

- E. & G. BROOKE'S "Anchor Brand" Nalls, Brads, | EXCELSIOR MILLS. Genuine Turkish Emery. MALLORY, WHEELER & CO.'S Door and Pad
- UNION MANUFACTURING CO.'S Butte,
- AMERICAN SCREW CO.'S Screws
- D. R. BARTON TOOL CO.'S Edge Tools, &c.
- FRANCE'S Shutter Holders. Anti-Window Rattlers, Brass and Nickel-Plated. WESTERN FILE CO.'S Cast-Steel Files.
- AMERICAN SHEAR CO.'S Shears and Scissors. HP NAIL COMPANY'S Wire, Steel, Iron and Brass Nails and Barbed Kails. STEELE & SONS' Wrought Handle Sad Irons.

BROWN & BRO.'S Silver Plated Spoons and Forks. GAYLORD MANUFACTURING CO.'S Till, Chest and Cupboard Locks.

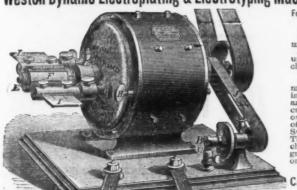
AMES' Genuine Chester Emery.

COLWELL & COLLINS, NORWAY BOLT CO., Norway Carriage and Tire Bolts.

PLYMOUTH MILL CO.'S Black and Tinned Iron AMERICAN MACHINE CO.'S Fluters, &c.
STUART PETERSON & CO.'S Tipned and Exampled Ware, &c.

Also a large line of Heavy and Shelf Hardware.

HANSON & VAN WINKLE, Sole Agents for Weston Dynamo Electroplating & Electrotyping Machines, Newark, N. J.



For Nickel, Bronze, Brass, Copper and Sliver Plating. Over 1000 machines in use. Are used by all leading stove nanufacturers.

Experienced men sent to purp machines and instruct purp

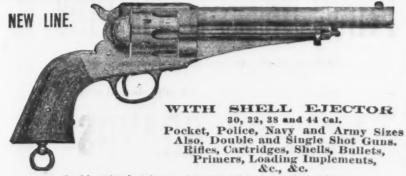
up machines and instruct purchasers.

INFRINGEMENTS.

We call attention to infringements of the Weston Machine in which Automatic Switches are used to prevent change of current. The Weston Co. are owners by grant or purchase of all forms of Automatic Switches for Plating Machines. The adoption of these machines will certainly lead to great loss to parties purchasing or using them.

ast Nickel Anodes, Pure Nickel Salts, Polishing Materials.

New York Office, 92 & 94 Liberty St. Manufactory, Newark, N. J.



Send for reduced catalogue and discounts of goods manufactured by E. REMINCTON & SONS 283 Broadway, **NEW YORK**

THE GEM CARPET STRETCHER. THE DELUSION.



Patented June 8, 1880. The Best and Cheapest in Use. DIRECTIONS.—Tack the carpet at one side of toom, then go to the other side, and with the Stretch

CLAUDIUS JONES & CO., Erie, Pa.

CHARLES H. HOWEL

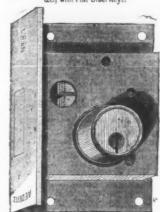
MANUFACTURERS OF FIRST QUALITY

PAINTS, COLORS, OILS, VARNISHES, DRYERS.

212, 214 & 216 Race St., Philadelphia, U. S. A.

A. E. DIETZ,

essor to Barnes & Deitz,) Manufacturer of Store Door Locks, Night Latches, Padlocks, Drawer Locks &c., with Flat Steel Keys.



Durrie & McCarty, Agents, 97 Chambers & 81 Reade Sts., New York.

FORSYTH SCALE CO. YOUNGSTOWN, O., Manufacture a full line of

FORSYTH'S STANDARD SCALES Counter, Portable, Dormant,

> Stock and Hay, and R. R. Track

SCALES.

Call Special Attention to their SUSPENSION HAY & R. R

TRACK SCALES. Also, Warehouse Trucks and Letter Presses PRINCIPAL WAREHOUSES,

DURRIE & McCARTY, New York; FORSYTH SCALE CO., Chicago; SIMMONS HARDWARE CO., St. Louis,

PRIZE MEDALLISTS:

Exhibitions of 1862, 1865, 1867, 1872, 1873, and only award and medal for Noiseless Steel Shutters at Philadelphia, 1876; Paris, 1878, and Melbourne,

CLARK, BUNNETT & CO.,

LIMITED, Late CLARK & COMPANY, Original Inventors and Sole Patentees of

Noiseless Self-Coiling Revolving STEEL SHUTTERS,

FIRE AND BURGLAR PROOF. ALSO IMPROVED ROLLING WOOD SHUTTERS,

Of various kinds. And Patent METALLIC VENETIAN BLINDS.

Endorsed by the Leading Architects of the World.

Stalogue.

Office and Manufactory, 162 & 164 West 27th St., N. Y.



Philadelphia,

Lamp Posts, Valves, &c., Mathew's Pat. Anti-Freezing Hydrants. 400 CHESTNUT STREET.



G. W. STORER, General Agent,



BROWNING, SISUM & CO., 85 Chambers St. Manufacture

Belt Hooks, Cotters, Spring Koys, D Rings,

Staples, and everything pertaining to wire bending
Factory, BROOKLYN. L. COES'

Genuine and Mechanics

PATENT

Screw Wrenches

L. COES & CO.,

Worcester, Mass.

ESTABLISHED IN 1839.



Our Genuine Wrenches are made w straight bars, full width and enlarged jaw, hing ribs cast inside, which strengthen the jand give a full bearing on front of bar. The improvements, in combination with our n ferrule, made with double bearings, an in tube, fitted to the shank and resting agaithe lower bearings, rigidly held in position the handle and nut, effectually proventing bethrust of ferrule (see sectional view), we our claim that we manufacture the heaving strongest Wrench in the marke? No genuine unless stamped

L. COES & CO.,

Worcester, Mass.

Warehouse, 97 Chambers and 81 Reade Sts., NEW YORK.

DURRIE & McCARTY, Sole Agents.

1882 Pennsylvania Lawn OUTSTRIPS ALL COMPETITORS. PREMIUMS TAKEN OVER ALL OTHER MOWERS.
EVERY MACHINE WARRANTED TO WORK AS REPRESENTED.



BEST 10-INCH FORWARD CUT LAWN MOWER in the MARKET, named "QUAKER CITY."

For descriptive catalogue and prices write to DURRIE & WALTON, Philadelphia.

DURRIE & MCARTY, New York.

AMES PLOW CO, Boston, Mass.

PRATT & CO, Burdalo, N. Y.

SIMMONS HARDWARE CO, St. Louis, Mo.
HAMILTON & MATHEWS, Rochester, N. Y.

MARKLEY, ALLING & CO, Chicago, Ill.

LLOYD & CLARKE, La Crosse, Wis.

HAMILTON & MATHEWS, Rochester, N. Y.

LLOYD & CLARKE, La Crosse, Wis.

T. M. CLARKE & CO., Atlanta, Ga.

CHAMPLAIN Forged Horse Nails.

NATIONAL HORSE NAIL CO.,

Vergenues, Vermont.

HOT FORGED AND COLD HAMMERED POINTED MADE OF BEST NORWAY IRON AND WARRANTED.

A full line of "CHAMPLAIN" and "NATIONAL" Nails always on hand at our Warehouse, 97 CHAMBERS AND 81 READE STREETS, NEW YORK. **DURRIE & McCARTY, Sole Agents.**

Cast Iron Pipe NEW ENGLAND BUTT

IN GREAT VARIETY.

Tailers' Box Irons.

Waffle Irons.

Foot Scrapers.

Detachable Handle Sad Irons.

Patent Foot Scraper and Cleaner.

Sad Irons, Polishing Irons, New England Gate Hinges. Woolman's Self-Closing Gate Hinges.

Barn Door Hangers, Rolls & Rail.

Mrs. Cook's, McCoy's and New England Polishing Iron.

Laundry and Tailors Irons, Sliding Door Rolls and Way. Butterworth Window Springs. Grindstone Fixtures.

Patent Saw Clamps. Patent Floor Jacks.

Cistern Tops and Covers.

Stair Rail, Store and Fancy Brackets. Harness Hooks and Brackets.

Braiding Machinery for Silk, Worsted or Cotton, and for covering

Whips and Telephone Wire. Flush Pulls, Small Anvils, Dumb Bells. Fine Castings a specialty. WORKS AT PROVIDENCE, R. I.

New York Office, - 99 Chambe BOSTON ACENTS-NASHUA LOCK CO. 99 Chambers Street.



VARIETY IRON WORKS.

KYSER & REX, Hardware Specialties, Iron Toys, Novelties

and Housefurnishing Hardware, Main Office and Factory, Trenton Ave. and Margaretta St., Frankford, Philadelphia Branch Office, 19 & 21 S. 4th St., Phile. Hardware specialties manufactured to order. an; present anxiety as to what may occur y in the New Year. It seems to be tacitly erstood and admitted that prices are cer-

manufactured iron and steel rails are strong in all directions, with continued activity at the works and much firmness in the open market. In the North of England and Scotland the demand for ship plates is on an enormous scale, and prices have been advanced during the week. Angles have also moved up for the same reason. For boiler plates, locomotive frame plates, and other engineering iron, extensive orders have lately been given out and prices are rising, seeing that some of the engineering firms last week secured further contracts for engines, counting over 100 in number. One engines, counting over 100 in number. One house alone at Glasgow (Neilson's) has orders for 150 locomotives upon its books, and there are many other firms equally well supplied. This state of things accounts for the great demand for axles, tires, bearing springs, hornblocks, tubes, &c., and will give ample employment to manufacturers of give ample employment to manufacturers of those and similar goods for a long time hence. Welsh bar iron is firmly held at £5. Io/ per ton, and js being sold with some freedom for the East of Europe and Asia, as well as for South America and your Southern States. Staffordshire bars, sheets, hoops, rods, tube strips, bedstead angles, &c., are all moving off freely, with a disposition on the part of manufacturers to hold out for augmented prices. As a matter of fact 2/6 @ 5/ more is being paid, unmarked bars being £6. 5/ @ £6. 15/, and marked bars, £7. Io/save in one case where £7 is the nominal figure, and Lord Dudley's £8. 2/6. Sheets are exceptionally stiff at £8. 5/ @ £8. 1o/ for singles and pro râta for doubles and trebles. Hoops are in fair request at £7 @ £7. 1o/. Hoops are in fair request at £7 @ £7. 10/. With a gradual strengthening in full rates there is every likelihood of new increments early in January, particularly as higher wages are certain to become due to the ironfor ship plates to £7 per ton, and angles to early in January, particularly as higher wages are certain to become due to the irronmasters under the sliding scale arrangement. Iron rails are quiet at £5. 10/ @ £6, makers being well engaged. Old rails continue firm, and in moderate supply only, at £4. 10/ c. i. f. New York for old D. H., or £4. 12/ 6/, Baltimore, &c. Heavy wrought scrap is unaltered at £4. 5/ @ £4. 7/6 per ton, c. i. f. New York. The Bessemer works are quite as busy as of late, most of them having more work than they can run through for months. The rail mills absorb a large proportion of this pressure, and are turning out more than at any former juncture. Bolckow's, Barron, Wilson & Cammell, and Dowlais, all exceed 3500 tons weekly, and last week Rhymney produced 3005 tons, one blow at a time, in 12 shifts, the rolling being done in 11 shifts. At Rhymney a 30-inch blooming mill has been put down, with a pair of 25-inch reversing engines, Steel, Tozer & Hampton are about putting down a pair of reversing engines similar to Bolckow-Vaughans, and are rumored to have offered a premium of £300 to the makers for early delivery. I don't guarantee the truth of the rumor. Blooms are wanted at about £5. 15/ for your market, but producers hold back, as they do also in respect of rails, the nominal quotation for which is £6. 5/ to £6. 15/. Very few parcels are now available for delivery prior to April next. It is stated that Bolckow-Vaughans have received an order, inter alia, for the Novaro-Pino line, connected with the for the Novaro-Pino line, connected with the St. Gothard tunnel, for 7420 tons rails, delivered in Genoa, at 170 francs 2 ton, equal to about £6. 16 2 ton, taking 25 francs to the £ sterling. It is said that the Alta Italia Railway Company has revised its competition of October 29 for the supply of rails, and has now decided to accept the following:

The Union, of Dortmund, 12,000 tons, 170f. 35c. and 173f. 35c.; Bochum Steel Works. Vaughans have received an order, inter alia, for the Novaro-Pino line, connected with the 35c. and 173f. 35c.; Bochum Steel Works, 1200 tons, 175f. 48c.; to the same company Workington.... another contract for 3000 tons at 177f. 48c. and 182f. 48c. The Bochum Works has undertaken to deliver 3800 tons of rails, No. 3, at 183f. and 188f. The Roman Rail-way received the following tenders for 12,500 tons of Bessemer steel rails : Bolckow Vaughan & Co., 6500 tons at Leghorn in the first six months of 1882, 174f., and 6000 tons Naples, Civita Vecchia and Leghorn, 167f.; Cockerill, 7500 tons for Leghorn, and 6000 for Civita Vecchia and Naples, 176f.;

are checked by the state of the bar at Bilbao and the bad weather there.

SCOTCH PIG IRON

has been quiet in a general way since my last week's report, with some little weakness, accompanied by lower quotations in warrants and a disposition on the part of holders to realize. At the same time a tendency to "bull" the open market is noticeable, and it would not be surprising were the first weeks of the new year to be characterized by rapid fluctuations in both directions. There are still 105 furnaces (including 9 on hematites) at work in Scotland, as compared with 122 this da e last year. The quantity held by Connal's is now 626,156 tons (an addition of 2493 tons within the week), against 492,568 tons this year, while the importations of Middlesboro' pig have been 246,315 tons, an increase of 29,769 tons, to date in 1881. Steam freights, Glasgow to New York, remain at about 12/6 per ton in full; sailers to the carly monthly average. main at about 12/6 per ton in full; sailers not asked about. The monthly average prices of warrants this year have been:

| 1551. | 1000. |
|----------------|---------|
| January 52/15% | 70/1 |
| February 50/7% | 67/7/2 |
| March 48/7% | 50/11 |
| April 48/1 | 58/ |
| May 45/1% | 45 11 0 |
| June 4 7 | 47/239 |
| July 47-72 | 52/4/4 |

| | | | | | | = | | - | - | = | | |
|---|----------------------|--|--|---|--|---|------|---|---|---|--------|---------|
| - | August
September. | | | | | | | | | | | 54/61/2 |
| 1 | October | | | | | | | | | | 51/336 | 50/73/4 |
| 1 | November. | | | | | | | | | | 50/036 | 52/01/4 |
| ŀ | December | | | ٠ | | |
 | | | ٠ | 100 | 51/61/2 |

tan to improve, and that, as a consequence, it is good policy to avoid forward sales as far as possible, unless buyers agree to pay the rates which may obtain at the times of the deliveries, or will now give a fair advance over current quotations. Some of the results of this cautious method of procedure are already apparent, in the shape of statements that contracts have been entered into for supplies of pig, &c., iron over the first quarter of 1882 at 1/@2/6 above the figures now obtaining.

MANUFACTURED IRON AND STEEL RAILS are strong in all directions, with continued are strong in all directions, with continued are strong in all directions, with continued are strong in all directions. The demand for maker's realizing profits. The demand for maker's realizing profits as a shade quieter, but there is not much alteration in quotations. On Monday the warrant market opened at 53/2½, afterward steadily receding to 52/9 per ton. On Tuesday a moderate business was done from 53/@52/8, cash. On Wednesday the market was very flat and a large business was transacted from 52/6½ to 52/per ton. This

| | | | No. 1. | No. 3 |
|-------------------|----------|---|--------|-------|
| G. M. B., at Glas | 190W | | . 53/ | 51/ |
| Gartsherrie, at | Glasgow. | | 61 6 | 55/ |
| Coltness. | 66 | | 62/6 | 54/ |
| Summerlee, | 16 | | . 6x/ | 547 |
| Langloan, | 0.6 | | 62/6 | 54 |
| Carnbroe, | 60 | | 55/ | 54/ |
| Calder. | 4.6 | | 60/6 | 54/ |
| Blengarnock, at | Ardrossa | n | . 55/6 | 53 |
| Eglinton, | 5.0 | | . 53/ | 50. |
| Daimellington, | 85 | | . 53/ | 50. |
| Shotts, at Leith. | | | . 62/ | 55 |
| Kinnell, at Bo'ne | | | | 51/ |
| Chammer at Chamer | | | 6 | mm 14 |

| mak | ers' wharves i | in Tees, are quoted: | |
|------|----------------|----------------------|-----|
| 11 2 | Foundry | 47/3 Mottled | 3 |
| . 4 | Forge | 42/9 Kentledge 43/ | 6 |
| 7773 | 11 1 0 | 201111 2 1 | . 1 |

engineering shops are all fully employed, while the shipbuilders are literally overwhelmed with orders. On December 13th, the plate manufacturers raised the quotation for ship plates to £7 per ton, and angles to £6. 10/, both kinds of iron being in great request. The foundries have secured new

WEST COAST HEMATITES

| | West Cumberland | | | |
|----|-------------------------|---------|-------------|----------|
| | Lowther | 62/6 | 61/6 | 60 6 |
| i | | | | 60/6 |
| | Distington | 62/6 | 01/5 | 60/6 |
| | Harrington | 62/6 | 61/6 | 60/6 |
| | 8 dway | 62/6 | 61/6 | 60/6 |
| | Maryport | 62/6 | 61/6 | 60/6 |
| | The Distington Iron | | | |
| 1 | has been formed, wit | h a car | pital of £6 | 0,000, |
| ij | in two classes of sh | | | |
| 1 | from this district last | week v | vere 10,02 | 5 tons |
| 1 | of pig iron and 4020 to | ons of | blooms and | l rails. |
| ĺ | There are 65 furnaces | in and | l 16 out of | blast, |
| -1 | marking on son Anna | | and Cha- | - h- |

6000 for Civita Vecchia and Naples, 176f.; Rhine Steel Works, 6500 tons, 184f. 50c., and Bochum, 12,500 at 186f. at Leghorn, Civita Vecchia and Naples. Pieroid Frères, of Montigny, Belgium, have an order for 10,000 tons of "Sevres" rails, and all the Belgian, French, German and Austrian mills are fully occupied, the majority having their order books well filled for deliveries over the corder books well filled for deliveries over the support of 1882.

38.75, and Spelter, 46.50 @ 47. Iron.—In the Ardennes there is more work than the rolling mills and machine shops can conveniently attend to; no further advauce is, however, reported from there, Belgium competition preventing it. They quote: No. 2 Merchant, 18.50 @ 19 francs \$\mathbb{P}\$ rook kg., and Common Sheets at Sedan and Charlevile, 25 @ 25. In the Haute-Marne activity has abated somewhat, and No. 7 Coke, Merchant, remains there at 20 @ 20.50; ditto Mixed, 22, and Charcoal, 23 @ 24. In the Loire and Rhone the scarcity of freight cars hampers business very much. At the Creusot the output is enormous, and the Thomas Gilchrist process proves a brilliant success there. At \$\mathbb{E}\$, Chamond Steel and Iron mixed Sheets are now turned out; there is a great demand there for Rails, Sheet Iron, Guns, &c. The Terrenoire Company have just now received an order from the Paris-Lyons-Marseilles Railroad for 20,000 tons Steel Rails at 23 francs \$\mathbb{P}\$ ton, deliverable during the fore half of 1852. Only a short time ago the Creusot still made a similar contract for 170 francs. Not much of interest transpires just at present in the Meurthe and Moselle district. Fuddle Fig is worth a & Nancy and in the vicinity of francs; Foundry No. 3, 83 @ 8.50; at Longwy Puddle Pig is worth 8 &, and Fountry No. 3, 8.20 @ 8.30 francs \$\mathbb{P}\$ took &, and Fountry No. 3, 8.20 @ 8.30 francs \$\mathbb{P}\$ took &, and from the formarket is moderately active, but firm, first-class Merchant No. 2 being worth 18.50, with 1 franc difference between numbers. Special Iron and Corners, 19.50. Coal is in active request for industrial wants, less so for domestic requirements. 38.75, and Spelter, 46.50 @ 47. Iron.—In the Ardennes there is more work than the rolling mills

BELGIUM.

BXL611 M.

(Revue Universelle.)

BRUSSELS, Dec. 18, 1881.—Iron.—The situation remains a highly satisfactory one along the whole line in this country. Work abounds: many of our makers are compelled to decline orders unless a reasonable time for delivery be allowed them. A good many orders are given and accepted for distant delivery. We know of a case in which November, 1893, was stipulated as the date of delivery. Although, as is usually the case, some works have reason to be more content than others, no-body complains. Pig Iron continues to rise in all directions. English Foundry Pig is worth 6.60 francs the 100 kg., delivered at Antwerp, and at Charleroi no Pig can be got under 6.50 francs. Blast furnaces have made large sales latterly, and the rolling mills now seem to have secured a tolerably good supply, but we do not think that Pig Iron will give way so very soon from the figures just quoted. There is a brisk demand for Old Rails, which a few days ago, at an adjudication. brought 10.25 c. 10.107 francs \$\text{P}\$ ton. Merchant Iron is very firm, 14 france \$\text{P}\$ ton. Merchant Iron is very firm, 14 france \$\text{P}\$ ton. Merchant Iron is very firm, 15 france \$\text{P}\$ ton. Merchant Iron is very firm, 25 france \$\text{P}\$ ton. Merchant Iron is very firm, 25 france. \$\text{P}\$ ton. 10 man and Corners are worth 15 \$\text{P}\$ 15.50; Sheet Iron, 19 \$\text{Q}\$ 1,50; and large Plates, 17.50. Pierard Bros., at Montigny, have just sold to an Italian railroad company 10,000 steel rails, made after the new Serres system. We hear the government will, within a fortnight, come out with an order for 3000 freight cars.

SERMANY.

GEBMANY.

GEBMANY.

HAMBURG, DEC. 13, 1881.—Iron.—Our Dortmund correspondent writes about the situation there that it continues to be favorable. Accounts from abroad are cheerful, and the large orders received keep the Dortmund district in good position, with a rising tendency. Fig Iron is consumed in steadily increasing amounts; production does not suffice to cover requirements. The kinds of Fig most in demand are Rhenish, Westphalian. Nassau and Siegen Puddle Fig, the latter description in particular, and all these kinds still tend upward in response to the extraordinary rise in Coal, but all other Fig, such as German Foundry, Bessemer and Spiegeleisen have remained stationary, Great activity is furthermore noticeable in Merchant Iron, and it has now risen to 15 marks as a basis, below which figure it would be difficult to get any. The tolling mills are unable to undertake any distant delivery, for most of them are loaded down with orders for two to three months to come. At the Bessemer Steel Works there is also more doing, and considerably so; various steel rail adjudications have again come off during the last few weeks, and more of them are impending More orders are dropping in too for Steel Flates and Corners, but above all Steel Wire enjoys an increasing demand which leads to much activity in Ingots suitable for its manufacture. Very satisfactorily and fully occupied are the foundries, machine shops, boller makers, locomotive and car works. Plentful are the orders for Screws, Bolts and all species of hardware. Coal—Is steady, cars still being scarce; household Coal is neglected in consequence of the mild weather, but for industrial purposes it is all the more active. In the Moselle and Sarre region Iron interests are flourishing, and the improvement continues; all rolling mills in the district have advanced Rod Iron 6 marks and Beams 4 marks \$\frac{9}{2}\$ ton. Coal is also doing well. In Upper Silesia the animated state of affairs does not abate, especially in Fig Iron for future delivery. Coal is quiest

(Koch & Vlierbo

ROTTERDAM, Dec. 12, 1881.—Tin.—Transactions since our last, of the 6th instant, have been very extensive, causing a fresh rise of 1,50 to 2, ulders, so that now no more Banca can be had below 67 guilders the 50 kg., and of Billiton none under 66.75 at 25¢ less sales would be easily effected.

(Austrian Trade Journal.)

(Austrian Trade Journal.)

VIENNA, Dec. 18, 1881.—Iron.—Activity in Austro-Hungary goes on developing in a quiet, uniform manner. Our Iron works have no reason to complain of the turn things have taken among us; the fact is that numerous orders have to be executed, insuring remunerative occupation all the way till next spring. The market favors in particular all railroad material. Much will depend in the immediate future upon the duty arrangement to be perfected between Austrian and Hungarian delegates. In its general features the revision of the tariff has been stretched out and the Iron duties are to be so modified, we hear, in such a manner that neither the blast furnaces nor the rolling mills will complain that one branch has been more favored than another. How the Iron trade will work under this change in the duties, it is, of course, difficult to forese; the general impression is that it will do well under it. Iron and Metals are not very lively so near the holidays, but they are fully sustained at the quotations given by us a week since. We quote at the close. Pig Iron, 48 @ 53 florins the loos kg.; Merchant ditto, 105 @ 120. Metals.—
Fopper, 76 @ 85 florins \$\frac{1}{2}\$ 100 kg.; Tin, 136 @ 140; Lead, 18,50 @ 25,50, and Spelter, 17,50 @ 21.

(Weber & Co.)

firms. I now learn that this supposition was fully warranted, and that orders for a large number of engines for the United States have been received in this country. These have been received in this country. These contracts have been placed at Newcastle (with a well-known firm) and the work has been put in hand. The locomotives will be constructed, of course, of British iron and steel, with British workmanship, but their leading principles will be purely American, such as Baldwin's turn-out, with the compensation idea fully worked out and with very slight modifications in other respects.

FUREITIA.

Paris, Dec. 18, 1881.—Metals.—Since our last weekly report business, so near the holidays, has been quiet. Metals were moderately active, and number of the straint have been at the close, there is little to be had. We quote \$\frac{1}{2} \times \frac{1}{2} \time

glance the tool seems to be similar in most respects to those in common use, except that a decided improvement has been made in putting on a round handle. A clutch in the ball of the handle, however, is so arranged as to convert the tool into a ratchet. The hand then keeps firm hold upon the handle and drives the screw in after the fashion of a ratchet brace. At the upper portion of the handle there are thin notches cut in the iron band with which it is surrounded, in which a latch or button works. This button is shown in the cut resting in the center one. When in this position handle and bit are firmly clamped together, as in the common tool. Pushed to the left the handle revolves

Double Action Clutch Serew Driver, insure perfect freedom from induction, these Of all the tools used by the mechanic there is hardly one to be found more unsatisfactory than the screw-driver. The latest improvement upon this tool which we have seen is shown in the accompanying cut. At first glance the tool seems to be similar in most respects to those in common use, except that a decided improvement has been made in putting on a round handle. A clutch in the ball of the handle, however, is so arranged as to convert the tool into a ratchet. The



Double Action Clutch Screw Driver.

loosely on the spindle or bit to the left, but carries the spindle when turned to the right. This action is used when forcing a screw home. To turn a screw out the button is turned to the right, which causes the handle to carry the spindle in the opposite direction. This arrangement canables the pressure upon the screw-driver to be constant, and allows the work to be done with one hand alone. The strain of the work is all taken by the metal, none coming upon the wood. Altogether, the tool is one of the neatest and most valuable improvements in its line that we have seen. done with one hand alone. The strain of the work is all taken by the metal, none coming upon the wood. Altogether, the tool is one of the neatest and most valuable improvements in its line that we have seen. This form of screw-driver is especially useful in putting up many kinds of fixtures, especially when they are above the head. They also seem to be especially adapted to fine work, as they give the operator very complete control of the screw. Messrs. Mallett & Co., Augusta, Me., are the manufacturers, and Messrs. Durrie & McCarty No. 97 Chambers and 81 Reade streets, New York, are sole agents for these goods.

SCIENTIFIC AND TECHNICAL.

In view of the fact that the Post Office authorities of London are contemplating lay-ing all their telegraphic wires underground, it is interesting to know that an important economy in their cost, and in the space occupied by them, has recently been effected by Mr. Edwin Truman, of London, England. The invention has special reference to The invention has special reference to

TELEPHONE CONDUCTORS.

at least one-fourth of the present cost.

Messrs. Koch and Klocke made a series of measurements about one year ago to deter-mine the rate and character of

THE MOVEMENT OF GLACIERS,

using essentially the same methods employed in a previous series of observations conducted in 1879. Their first observations seemed to prove a considerable and unexpected degree of irregularity in the movement. It was found, for example, that the same point could have a motion in both a vertical and horizontal direction, and that two points not very far apart in some cases moved at a different rate or even in opposite directions. The observations of 1880 have, on the whole, given a rather negative result since; for some un-known reason the motions measured were much smaller than before, those in a vertical direction, for example, hardly exceeding the unavoidable errors of observations. Messrs. Koch and Klocke concluded that the amount of observed movement, vertical and horizontal, often did not exceed the probable error, It is now well known that to employ telephones with a good result the earth must not be used for the return current, but that two wires must be employed, the one to send the be wholly referred to irregularities in the current and the other for the return. To position of the observing telescope.

BRANDS OF TIN PLATE.

In view of the fact that our house has always refused to

Private Brands of Tin Plate,

and have for years openly opposed the system, we soon expect to publish (about February 1st) a list, in alphabetical order, of

MAKERS' BRA

OF BRIGHT AND ROOFING PLATES,

which we will furnish our customers only on application. The permicious system of private brands can only he broken up by dealers and consumers refusing to accept any other brands than in this list.

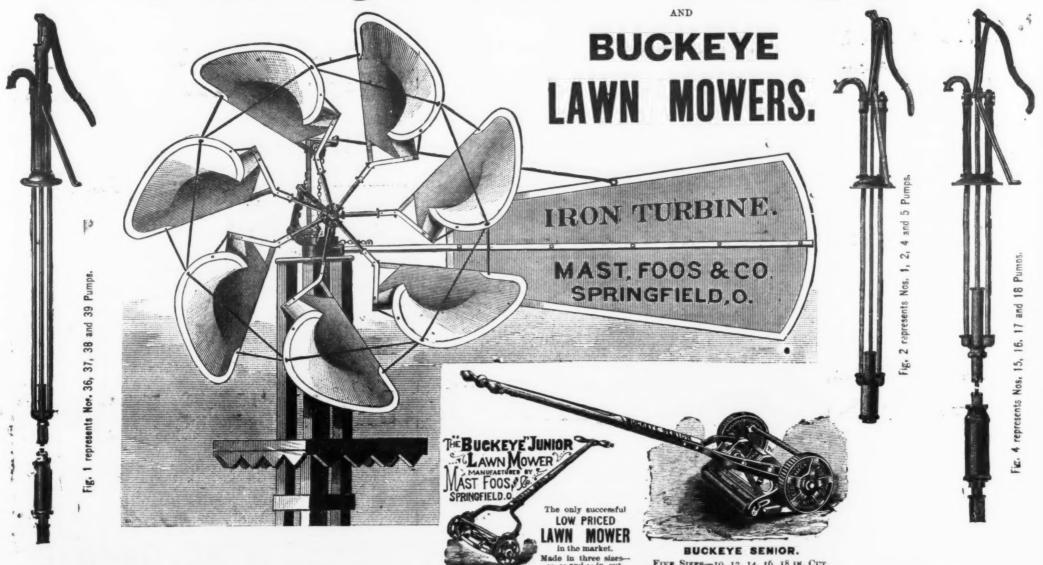
MERCHANT & CO., PHILADELPHIA.

CLIFF & BEEKMAN STS., NEW YORK.

Address all orders to Philadelphia.

TURBINE AND BUCKEYE WIND ENGINES,

Buckeye Force Pumps,



MAST, FOOS & CO., Springfield, Ohio, U. S. A.





MPROVED AUTOMATIC TIRE AND AXLE UPSETTER.

Door Springs, Trunk Locks, Pad Locks,
Dead Latches,

Keys, &c., &c. 110 South 8th St., and Sansom, bet. 8th



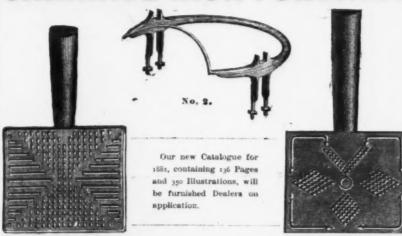
HILLEBRAND & WOLF.



Bevin Bros. Mfg. Co., Easthampton, Ct. Manufacturers of

SLEIGH BELLS, House, Tea, Hand, Gong Bells, &c.

& HOWE,



The "Derby."

COMPRISING

The "Diamond."

FIFTH WHEELS, BODY LOOPS, STAY ENDS, OFFSETS, SLAT IRONS, REACH PLATES, JOINT ENDS, STEPS, &c.

WE GUARANTEE OUR GOODS.

STANDARD MANUFACTURING CO.,



Standard, Acme 🧑 and Domestic Egg Beaters. Also, Housefurnishing Goods generally. Circulars and samples on application.

131 PORTLAND STREET, -

IMPROVED PADLOCKS for Railway Switches and Freight Cars, used by many leading roads; also, Master Keyed Fadlocks for Tool Houses, &c. The above made to order only, and have fast steel Keys. Our well-known six and seven tumbler cast brass Padlocks, with or withous Chain or Nickel plating, are handled to good profit by both home and foreign trade. We guarantee to make no two keys alike in a mittion. For security, durability and convenience, skilled mechanics say they have no equal.

D. K. MILLER LOCK COMPANY, Philadelphia, Pa.



KEYSTONE WORKS. Centennial Award

GEORGE GRIFFITHS,



Shovels, Spades, Scoops, Coal Hods, &c.,

Nos. 511, 513 and 515 LOCUST ST., PHILADELPHIA, PA., U. S. A.

Send for Fric. Link

Ericsson's Latest Invention.

Experiments with Capt. Ericsson's iron torpedo boat Destroyer, built at the Delama-ter from Works, recently occupied the atten-tion of officers at the Brooklyn Navy Yard for several consecutive days. Full reports will be forwarded to Washington. The effort was to strike a submerged target of netting with a projectile formed of a wooden log, 15 feet in length, corresponding in dimension with the missile to be used in warfare. Th latter, in most instances, was placed 300 yards away, and the log usually spent its force about 300 yards beyond. Sometimes the largest was penetrated, but more frequently, the missile went astray, in one instance burying itself in the mud. The Destroyer is an iron boat with hull almost entirely submerged. Upon this hull, placed well aft, is a deckhouse of sheet iron. The hull is 130 feet long, 12 feet wide and 11 feet deep. She is a double-ender, and is profeet deep. She is a double-ender, and is propelled by an engine of 1000 horse-power. The steering apparatus and the torpedo guu—in fact, all of her effective appointments—are below the water level. The armament consists of a single gun placed just above the keelson in the forward part of the boat, its muzzle opening directly into the water, which is excluded from it by a permanent valve hung by an elbow-joint to the stem, and opened or closed ly a piston operated at the breech of the gun. When the gun is to be fired the valve is raised out of the path of the projectie and its place is taken by a temporary valve of wood or rubber cloth, which fits the muzzle tightly and is placed in the gun after it is loaded. This is shattered when the gun is fired. As the projectile leaves the muzzle the permanent valve again comes in position, the little water that rushes in runs through the breech to the bilge and is pumped out by a steam syphon. The torpedo which it is proposed to use in actual warfare is a chamber of iron or copper, large enough to contain of iron or copper, large enough to contain 340 pounds of dynamite, and it is claimed that against this little vessel the most powerful ironclads will be helpless, as the sub merged gun will penetrate them beneath their armor, and her great speed and facility of maneuvering would enable her to get in her work among a fleet of big ships almost at will and with entire safety.

How Lost Cars are Traced.

The following is from an interesting article in the Philadelphia Press:

The following is, from an interesting article in the Philadelphia Press:

Travelers up and down any line of railway see daily hundreds of fugitive freight cars extending in broken lines along the side tracks and reaching many miles out of the city. They belong to a hundred different railway companies, each bearing the initials of the proprietary road, and in the general office of the company, whether it be in New York, Pittsburgh or San Francisco, there are records that show just where that car is standing and why it is there. For instance, if the car is detained an unwarranted length of time at Germantown Junction, the Pennsylvania Railroad receives a "searcher," either by telegraph or train service, asking why the car is not sent home. In this way a great railroad stretching half way across the continent, and with its rolling stock scattered over every State in the ing stock scattered over every State in the Union, keeps an account of its stock, num-bering, in the case of the Pennsylvania Railbering, in the case of the Pennsylvania Railroad, more than 30,000 freight cars of all
kinds. Occasionally one of the number is
lost altogether, and then the complicated
railway detective service is set at work.
The last clew to its whereabouts is traced
out, and in time the lost car is found somewhere between Texas and Montreal. As
soon as a car is unloaded it should be started
back to the road from which it came but in New England they turn it over as the common property of the road, and it is run back and forth, carrying local freight. It is not an uncommon thing when a car is loaded and sent to an Eastern point that it is not again heard from for three or four months. In the meantime there are more than loo clerks employed on the car accounts, and week after week searchers are sent out for the missing car. A fair idea of the magnitude of these accounts may be had from the fact that the entire movement over the Pennsylvania Railroad exceeds over 40,000 per day. Lost freight cars which were forper day. Lost freight cars which were for-merly hunted by traveling agents, are now traced by "searchers," official documents, which contain the number and description of the lost car, and the date at which it was last seen on the Pennsylvania road. These car, receiving many official signatures on the way, and finally overtake an agent who has the car in charge.

A fire started a short time ago under the counter of a prominent drug store on Chest-nut street, Philadelphia. A cool-headed clerk, remembering the soda-water fountain, sent promptly to the cellar for a piece of india rubber gas tubing, and slipping one end of this over the nozzle of the soda fountain faucet, turned on the tap, and immediately he had a powerful head of water highly charged with carbonic acid gas, the first dash of which on the fire put it out entirely

Six engine houses built in the heart of San Francisco to operate cable roads aggravated the "smoke nuisance" to such an extent that a case was brought in the court for its Suppression. Within the last few days Judge Evans, of the Superior Court, awarded damages to the plaintiff, who owns a dwelling adjacent to the engine house of the California Street Railroad Company.

TINIUS OLSEN & CO., STANDARD SCALES

TESTING MACHINES.

Manufacturers of Olsen's Little Giant Testing Machine, and Improved Railroad, Wagon and Furnace Charging Scales.

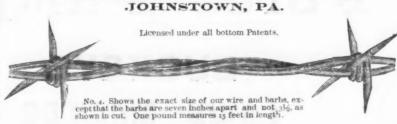
Office and Works, N. W. cor. 19th and Buttonecood Sts., Philadelphia.

This Advertisement Changed Weekly

WIRE

99 John Street, NEW YORK.

89 Lake Street, CHICAGO.



BROWN'S ADJUSTABLE PIPE TONGS.

best selected K BRUNN'S PATENT, NOV. 30. 1853 Address The Ashcroft Mfg. Co.,

111 LIBERTY STREET, NEW YORK. HARRISON BOILER "THE SAFEST."



Adapted for All Steam Purposes.

Merits have been proved during ten to fifteen years, constant use by such concerns as Cheney Bros., S. Manchester, Conn.; Wallace & Sons, Ansoula, Conn.; Wampanoag Mills, Weetamoe Mills, Sagamore Mills, Fall River, Mass.; Sears Building, Boston, Mass.; Brown & Sharpe Mig. Co., Providence, R. I.; A. T. Stewart & Co., Tifany & Co., New York; Stevens Institute, Hobokea, N. J.; Matthiessen & Wiecher's Sugar Refinery, Jersev City, N. J.; Wm. Sellers & Co., S. S. White, Daniel Allen, Jno. Gardiner & Co., Phosphor-Bronze Smelting Co., Henry Bower, Evening Bulletin, Saturday Night, Philadelphia, Pa., and numerous others.

Frankfin Institute medal awarded for superiority of evaporative efficiency, economical capacity for generating steam and dynamic value of steam. Easily transported on mule back.
Send for descriptive catalogue.

HARRISON BOILER WORKS, 15th and Wood Streets, Philadelphia, Pa.

COLLARS and FURNISHINGS.



Leads, Bells. Couplings, Harness, &c.



IVES' PATENT Burglar-Proof Door Bolts.

HOBART B. IVES 187 St. John Street, NEW HAVEN, CONN., U. S. A.

Send for Illustrated Price List



CLEVELAND IRON ORE PAINT COMPANY,

PURE IRON ORE PAINTS, Red (Rossie) Purple and Brow We guarantee all our Paints, and respectilly solicit the patronage of consumers an Office, 79 Columbus St., Cleveland, O.

BEST IRON PAINT



RIEHLÉ BROS. CALES TESTING MACHINES

PHILADELPHIA, 50 South 4th St. NEW YORK. 115 Liberty Street. PITTSBURGH. Liberty St., cor. 7th av ST. LOUIS. 609 North Third St.

TURKISH EMERY. PURE

Quartz, Pumice and Rotten Stone, Crocus, Rouge, Glue, Sand Paper, Emery Paper and Cloth, Emery Wheels, &c.

MILLS EMERY WALPOLE Mills, So. Walpole. 114 MILK ST., BOSTON, MASS.

PHOSPHOR-BRONZE! PHOSPHOR-TIN!

Phosphor-Bronze is daily gaining favor with manufacturers who have to use a metal of great toughness and durability, of fine grain, high ten sile strength and duetility, and is acknowledged far superior to any other alloy on account of the readiness with which it takes a polish, its elasticity, fluidity and beauty of color. We high price, however, has so far prevented the use of it to so large an extent as fix merit would warrant. For the first time an article is offered herewith which makes it easy for everybody to manufacture his own Phosphor-Bronze of the grade it is wanted, by the simple process of melting. This article is PHOSPHOR-TIN. By melting a very small quantity of it with copper an excellent Phosphor Bronze is obtained at a much cheaper price than the ready made Phosphor-Bronze can be had in the market. A trial ought to be made by everybody who is using it.

A. KAUFMANN, 36 Park Place, New York, Sole Agent for the United States and Canada.
For pamphiets please address the above, P. O. Box 2110, New York.

Bergen Port Spelter.

MINES: WORKS & FURNACES
Lehigh Valley, Pa. Bergen Port, N. J. The only Miners and Manufacturers of PURE

LEHICH

SPELTER From Lehigh Ore.

Especially adapted for Cartridge Metal and German Silver.

Also manufacturers of BERGEN PORT OXIDE ZINC. Superior for Liquid Paint on account of its body and wearing properties.

BERGEN PORT ZINC CO. E. A. FISHER, Agent, 13 Burling Slip, N. Y

BUCKEYE LAWN MOWER. SENIO AND JUNIOR "BUCKEYE" LAWN MOWERS. Most Reliable, Compact, EASY WORKING, Durable and Efficient Mower in the Market. Send for descriptive circular

1'8:

J. & J. A. RICF., Worcester, Mass.

SEMPLE, VALLE & BURCHARD CUTLERY CO.,

St. Louis, Mo.

St. Louis, Mo.

DEERE, MANSER & CO., Kansas City, Mo.

W. J. Kinser, Denver, Col.,

GEO. A. LOWE, Salt Lake, Utah.

D. E. GOLDSNITH, Sun Francisco.

D. F. MAST & CO., Philadelphia, Pa.

MAST, FOOS & CO., St. Louis, Mo.

J. DAULTON, Paris, France.

MAST, FOOS & CO., Liverpool, Eng.

MAST, F S & CO., Springfield, Ohio, U. S. A.

The Iowa Farming Tool Company,

MANUFACTURERS OF

AND RAKE HANDLES.

FOR THE JOBBING TRADE.

Fort Madison,

Iowa.

ROOF



For Carpenters, Painters, Masons and Firemen. The shingle on this side being left

out, the operation of the Bracket can be easily seen. It slides in between two shingles, with the foot slightly raised, two ears going under the shingles and two over; when the foot is pressed down the ears take a lever nip on the shingles, which, with the spur on the foot, makes it impossible for the bracket to come off. MADE BY

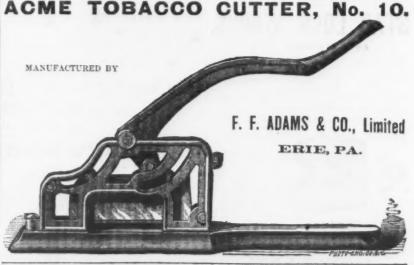
WILDER MFG. CO., Gardner, Mass.

FOR SALE BY HARDWARE DEALERS GENERALLY, WILLIAM BLAIR & Co., Chicago; HOWELL, GANO & Co., Cincinnati, Wholesale Western Agents.

H. H. COLES & CO., PHILADELPHIA.



NEW CHUCKING DRILL REST. It will ho'd all sizes of drills up to 11/4 inches



Stanley Rule & Level Co. MANUPACTURERS OF

Improved Carpenters' Tools.



FACTORIES. New Britain, Conn. WAREROOMS.

29 Chambers St., New York.

S

Manufacturers of Bailey's Patent Adjustable Planes.

General Agents for the sale of Leonard Bailey & Co.'s "Victor Planes."

Manufacturers of "Defiance" Patent Adjustable Planes.



Issues Policies of Insurance after a careful inspection of the Boilers COVERING ALL LOSS OR DAMAGE TO

Boilers, Buildings and Machinery,

STEAM BOILER EXPLOSIONS.

The Business of the Company includes all kinds of STEAM BOILERS. Full information concerning the plan of the Company's operations can be obtained at the COMPANY'S OFFICE, HARTFORD, CONN., or at any Agency.

J. M. ALLEN, Pres. W. B. FRANKLIN, Vice-Pres. J. B. PIERCE, Sec.

Board of Directors: GEN. WM. B. FRANKLIN, Vice Pres't Colt's Pat. Pire NDEE, Fres't Ætna Fire Ins. Co.

Arms Mfg. Co.

Arm anufacturing Co.

M. BEACH, of Beach & Co.

PHILLIPS, of Adams Express Co.

HILLIPS, of Adams Express Co.

HINGLIPS, of Adams Express Co.

W. H. JARVIS, Pres't Colt's Fire Arms

W. H. JARVIS, Pres't Colt's Fire Arms

WILLIAM ADAMSON, of Baeder, Adamson & Co.

Philadelphia.

HON. THOS. TALJBOT, Ex-Governor of Mass.

NEWTON CASE, Case, Lockwood & Brainard, Hartfore

WILLIAM ADAMSON, of Baeder, Adamson & Co. O. ENDERS Sec'y Ætna Life Ins. Co.

TT BRAINARD of Case, Lockwood & BrainD. R. SMITH, Pres't Springfield Fire & Marine Ins. Co









HENRY B. NEWHALL, 105 Chambers Street, NEW YORK AGENT.

S. H. & E. Y. MOORE 163 & 165 Lake Street CHICAGO AGENTS.



Spofford Bit Brace. Spofford Sleeve Brace.



Is the only shoe that will not lame an ox, which he can stand up square upon, and will prevent slipping. Six sizes. Liberal discount to dealers. Manufactured by

SHADBOLT, BOYD & CO., Milwaukee, Wis.

Kieser's Gem. Kieser's No. 55

Shearing Cut.

> Solid Cast Steel



Blades. Patented Sept. 14, 188c.

Family Meat Cutters are the best made. Every family should have one. Will thoroughly cut Raw or Cooked Beer or Pork, Vezetables, Cocanuts, Pine Apples, &c, Will cut forty pounds sausage meat an hour.
Every Druggist should have one for cutting Roots, Vanilla Beans, &c.
Easily worked. Easily cleaned. Will not get out of order. Ask your dealer for them.
Send a postal for Circular with testimonials.
Will send one as sample by express upon receipt of the control of



Are Made on the Same Principle as the Gem Meat Cutters,

But with capacity to cut 100 pounds Pork an hour.

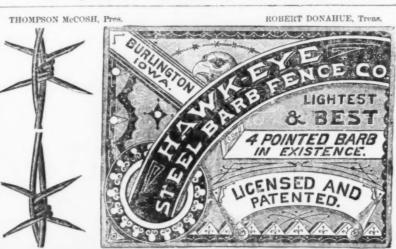
Will send one as sample on receipt of \$3.00. Our No. 1 Butcher, for hand or power will Will not get cut 300 pounds an hour.
Our No. A Butcher for power, will cut 1000

Also Sole Manufacturers of

KIMBALL'S PATENT SHOVELS & SPADES. BOSS PATENT MOLASSES GATES, LOCKWOOD'S PATENT HOES.

KIMBALL SHOVEL CO..

Office, No. 67 German St., Baitimore, Md.



PHILADELPHIA SCREW CO., Limited, Twelfth and Buttonwood Streets, PHILADELPHIA.



IRON & BRASS WOOD SCREWS.

Quality, finish and tests as to strength guaranteed equal to any in the market.

With improved facilities and largely increased capacity for production, we can fill orders promptly, and invite inquiries for discounts. A full line in stock.

American Dynamo-Electric Machine, Grindstones, Smery, &c. For Electro-Plating, Electrotyping, &c.

Requires no Water. Combining

all the



Latest Improvements. Cannot Reverse Current.

ZUCKER & LEVETT, Genl. Agents, NII

Manufacturers and Importers of NICKEL PLATERS' SUPPLIES. 540, 542 & 544 WEST 16TH STREET, N. Y.



Cuyahoga Falls. Ohio.

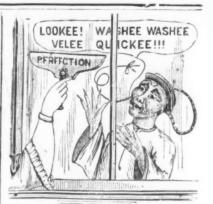
Tinned Belt Rivets

Burrs a Specialty

HUNDLEY & HANKS, NORTH CAROLINA HANDLE CO.,



MANUFACTURERS OF Handles and Spokes, de Street and 97 Chambers Street, NEW YORK.



THE PERFECTION WINDOW CLEANER CO.

are owners of every patent covering rubber win dow cleaning devices. Our manufacturing facili ties are large, allowing us to undersell cheap and vorthless infringements.

We mail sample Rubber Cleaner to all Dealers soliciting.

leaning Plate Glass, and must become as staple

A. F. CONANT, 3 Finsbury St , London, European Agent.

Rubber, Woodenware and Fancy Hardware Pealers generally keep our Cleaners.



Perfection Window Cleaner Co.,

167 Madison St., Chicago.



GEO. M. EDDY & CO., Manufacturers of

Measuring Tapes Of Cotton, Linen & Steel, ALL PURPOSES.

Walter R. Wood, GRINDSTONES.

Berea, O., Nova Scotia, & other brands. 983 and 985 Front Street, New York.

GEO. CHASE.

(0) L((S))

Of all description. 107th Street and Harlem River, r Illustrated Price List. NEW YORK.

NEWCASTLE GRINDSTONES

Celebrated for their uniform quality and keen rasping grit, have now a world-wide regutation.

For prices apply to R. ATKINSON & CO.,

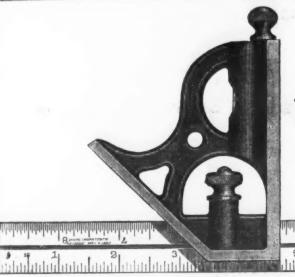
Office, Guildhall, Newcastle-on-Tyne.



McDERMOTT & BEREA STONE CO., GRINDSTONES,

EMERY.

PURE TURKISH EMERY. IRVINE, TOWNSEND & CO.
123 Chambers St., New York.



CHAPLIN'S PATENT

TRY SQUARE AND MITRE, SPIRIT LEVEL AND PLUMB.

CENTER SQUARE

DRAUGHTSMAN'S



STANDARD TOOL COMPANY,

ATHOL, MASS.,

Sole Manufacturers and Owners of the Patent.



WILEY & RUSSELL MANUFACTURING CO., Greenfield, Mass., Lightning Screw-Cutting Machinery and Tools.



MANUFACTURERS OF



Adze Eye and Bell Faced Nail Hammers, Machinists' and Blacksmiths' Hammers.

The attention of the trade is called to this line of goods as superior in style, quality and workmanship to any in market. Hartford, Conn., U. S. A. For Sale by C. E. JENNINGS & CO., 96 Chambers St., New York, and the Trade generally.

SAW WORKS.



W. B. BARRY, Indianapolis, Ind.

Circular Saws.

I use none but best refined cast steel, selected. All saws subjected to a careful examination

A trial of our goods will satisfy the purchaser of their excellence. Send for catalogue

THE GLOBE MANUFACTURING CO., Successors to THE MIDDLETOWN TOOL CO.

HARDWARE,

Baldwin" Plane

(Every Iron of our make warranted a perfect cutter.) Also, Galvanized Hammock or Boat Snaps and Gaff Topsail Self-mousing Ship Hooks, Har-mess Snaps, Baby Snaps, Washer Cutters, Pocket Wrenches, Amateur Lathes, &c. MIDDLETOWN, CONN.

Send for Catalogue and Discount Sheet,

GRANVILLE HYDRAULIC ELEVATOR COMPANY,

Offices No. 1193 Broadway,

NEW YORK.

Hydraulic Elevators for Passengers or Freight.
Hydraulic Double-Acting Dumb Waiters. Hydraulic Elevators. N. B.—Steam Elevators altered to Hydraulic Elevators.

FOUNDRYMEN'S METALLIC Pattern Letters and Figures,

Sole Manufacturers

ELBA IRON & BOLT CO., Limited.

BAR

SKELP IRON, SPLICE BARS, Railway Track Bolts, Car, Bridge and Machinery Bolts, Nuts, &c.

We invite the attention of RAILROAD MEN especially, to our make of SPLICE BARS and Track Bolts. Using the best brands of REFINED IRON, and paying close attention to the finish of our manufactures, we are enabled to offer our patrons BOLTS, NUTS, SPLICE BARS, &c., of excellent quality.

Our works have been enlarged within a few years; all orders are now executed with promptness; all our work guaranteed.

SEND FOR PRICE LISTS AND INFORMATION TO

BOLT CO., Limited, PITTSBURCH, PA.

CINCINNATI ROLLING MILLS AND CHAIN WORKS

Manufacture Trace, Coil. Ox, Log and Wagon Chain, Fifth Wheels, Shackles and King Boits, using only Iron made at our mills from strictly selected Wrought Scrap. To put on patterns of castings. All sizes. Reduced prices. Maid by H. W. Kaight Seneca Falls, N.V.

OFFICE, 30 West Third Street. MILLS & WORKS, Gest & C. H. & D. R. R. THE

IMPROVED HOWE SCALE

THE ONLY SCALE HAVING PROTECTED BEARINGS:



ADAPTED

Standards

COUNTRIES.



ADOPTED

AND USED BY THE

DEPARTMENT.





MANUFACTURED BY THE

HOWE SCALE COMPANY, Rutland, Vt.

Established 1856.



PAGE, FARGO & CO.,

BROADWAY, NEW YORK, DEPOT FOR THE SUPPLY THE EXPORT



CATALOGUES

AND

PRICE LISTS

In any Language,



SENT FREE

TO ANY

ADDRESS

Upon Application.





THE HARTFORD COMPRESSED-AIR PUMP.

Water Driven to any Hight and Distance by Compressed Air. Country Houses Supplied Cheaply and Certainly for Bath Rooms, Water Closets, Hot and Cold Water Faucets, &c.

Plenty of Fresh Water for Stock on Farms. The Best Pump for Irrigating, Supplying Railroad Tanks and for Mining Purposes.

This pump is being introduced into all the foreign countries, and is accepted by all mechanical men as the very best Pump in the market. It is more durable and needs less repairs than any other apparatus for like purposes, and is therefore the cheapest in the end, if not at first. Its advantages over other Windmills, Rams, and other contrivances for raising water, are quickly seen. For Circular and Price List address

THE HARTFORD COMPRESSED-AIR PUMP CO.,

EZRA BROOKS, Sec. and Gen'l Manager,

HARTFORD, CONN., U. S. A.

PROVIDENCE STEAM TRAP COMPANY, Manufacturers of Newton's Patent Steam Trap, Compensating Valve, Oscillating Furnace Bars, and Furnace Economisers

To Manufacturers, Bleachers, Dyers, and all Users of Steam: We wish to call your special attention to our Patent Steam Trap, acknowledged by practical engineers and manufacturers to be the best, simplest, most effective and durable Trap ever brought before the public. The simplicity of this Trap consists of doing away with all expansions and contractions, no glands or stuffing boxes, or bolts of any description required; no compound cylinders and no copper rods. The cover can be removed at any time to see it work; and if required the discharged water can be elevated from two to thirty feet, so that it can be used for other purposes. They will last from thirty to forty years. As regards frost and snow it makes no difference, as we have had and still have one working in the open air at Washington Mills, Lawrence, Mass., and it has done its work well, never having had any trouble with it, and bids defiance to all weather. That they have been thoroughly tested can be seen by the testimonials given below, of the few that have come to hand:

Washington Mills, Lawrence, Mass., November 18, 1880. Mr. R. Newton.—Dear Sir: The Steam Trap we bought of you last August works admirably. Please send us another as soon as possible. Yours truly, JAMES B. SINER, Mech. Supt.

Office of Washington Mills, Boston, December 24, 188e Providence Steam Trap Co.—Gentlemen: Please forward to Washington Mills as soon as possible six (6) % inch Traps and send bill to me.
Yours, truly.

HENRY F. COE, Treas.

TESTIMONIALS. Clyde Bleachery and Print Works, River Point, R. I., January 17, 1881. Mr. R. Newton.—Dean Sin: The Steam Trap we had of you is in successful and very satisfactory operation. Its simplicity in construction and undoubted durability will commend it to all who are in want of a superior Steam Trap. We shall order more when in need of any. Yours, truly,

S. H. GREEN & SONS.

Kendall Manufacturing Co., Providence, R. I., Feb. 1, 1881. Providence Steam Trap Co.—Gents: We have used one of your Steam Traps for some time and would say that we find it gives perfect satisfaction.

NICHOLAS SHELDON, Treas.

A. & W. Sprague Mfg. Co., Cranston Print Works, R. I., Jan. 15, 1880. Mr. Robert Newton—DEAR SIR: The Steam Traps we bought of you work first-cla and give every satisfaction, and appear to be very durable. We think them the ba Steam Trap that we have ever had. When in want of more will write you.

I remain, yours, truly, THOMAS BRISTOW, Supt. Cranston Print Work

Mr. Newton.—Dear Sir: We have your Steam Trap working satisfactorily, an can conscientiously recommend it to all. Yours, very truly.

B. COLLINGHAM, Supt. Atlantic Mills.

ROBERT NEWTON, C. E. M. E., Inventor and Patentee, Providence, R. I.

PATENT OSCILLATING FIRE BARS.

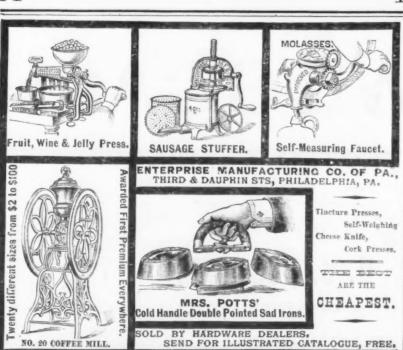
We wish also to call your attention to R. Newton's Patent Oscillating Fine Bars, which for durability, economy and application are acknowledged by all practical engineers that have seen them up to the present time to be the best ever brought before the public. This invention the patentee has labored at more or less since 1851. These bars have long been wanted, and their use will at once prove their efficacy as an economiser of fuel and labor. These bars can consume from four to twenty-six pounds of coal per square foot of grate, per hour, and not warp; and the apertures can be kept clean so that they can get a regular supply of oxygen, which is the life giving power of caloric. They can be applied to all kinds of boiler surfaces (except vertical), and can be fitted to the furnaces in about five hours. Testimonials can be forwarded, if required, to show that they are now in use

SOME OF THE ADVANTAGES: These bars allow the use of inferior coal; evaporating power is greatly increased. This is a great boon where boiler power and space is simited. This advantage cannot be over-estimated in the case of marine boilers. The oscillating of the fire bars both cuts and lifts the slug, and clears the apertures at the same time. The bars give four motions in one oscillation, and cannot get out of order. They are also free of expansion and contraction, both longitudinal and transversal, and however careless the stoker may be he cannot leave them so as to take any harm. They are so cast, and of such metal, that they are the most durable bar ever brought into use. All now in use are very much approved. They are very simple and cannot get out of order. Their cost is so reasonable that they come within the reach of all. The company are now granting licenses to several firms to make and apply them, and are open to arrange with other parties. N. B.—The company furnish first sets of models.

RONGERT NEWTON, C. E. M. E., Inventor and Patentee.

Agents wanted for different locations.

All communications should be addressed to PROVIDENCE STEAM TRAP CO., P. O. Box 1813, Providence, R. J.



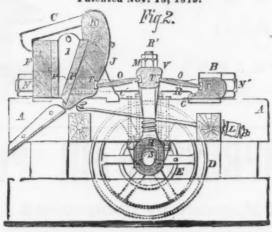
THE NEW BLAKE CRUSHER.

SAUSAGE CUTTER.

Smoked Beef Shaver.

Bung Hole Borer.

BLAKE'S CHALLENGE ROCK BREAKER



The most economical and reliable Crusher in use. Superior in all respects to our old style Blake Crushers, and rapidly superseding them and all imitations. For railway ballast, Macadam road making, and crushing of ores of all kinds it has no competitor.

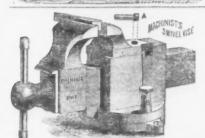
This machine dispenses with cast iron frame and pitman of our old forms. All strains are on wrought iron or steel. Awarded medals of superiority by judges of American Institute Fair, New York

City, 1879 and 1880, where it was exhibited in competition with our old forms of Crusher.

BLAKE CRUSHER

Sole Makers,





PRENTISS' PAT. VISES Adjustable Jaw.

Stationary and Pat. Swivel Bottoms. Adapted to all kinds of Vise Work.

101 Main St., Salt Lake City, Utab.

Sold by the Trade. PRENTISS VISE CO.,

23 Dey Street, New York, Sole Proprietors.



DOUBLE ACTION RATCHET SCREW

ONE OF THE VERY BEST TOOLS EVER INVENTED.

It combines greater Strength, Convenience and Durability than was ever obtained in a Common Driver. Sells readily and gives Perfect Satisfaction.



Trade supplied by the principal Jobbers throughout the U.S. or by the manufacturers,

PARSONS. GAY

Augusta, Maine.



SEND FOR PRICE LIST.



MAGNETIC METAL SEPARATOR.

MAGNETIC METAL SEPARATOR.

The accompanying cut represents a view of a recently invented machine for separating fron turnings, filings, &c., from brass, composition and other material.

Its capacity and utility for this kind of work surpasses anything ever before offered to the public, doing its work most thoroughly, and with the least amount of labor or trouble. The machine is not only a great labor-saving device, but brass stock treated with it is much improved, as it is thoroughly cleansed that it may be used for the best of work.

The machine may also be used for separating fron from emery

TESTIMONIALS.

From the Walworth Manufacturing Co., Boston.
Boston, Jan. 18, 1879.

Mr. Fras Sauyar, Worcester: Uf the many methods we have practised in separating fron from brass turnings and filings, we have found none equal to your machine. Very truly yours.

E. C. HAMMER, Treas.

From the Benedict and Burnhum Mfg. Company, Walsebury. Conn.

Waterbury. Conn.

Worcester.—Dean Sig.: We hand you check for Metal Separating our washings, and metal having fron in the same. Yours, &c.

CHAS, BENEDICT.

From Union Water Meter Company, Worcester.

We have used one of B. Fitts' Fatont Magnetic Metal Separators and it gives us satisfaction, effect ing a saving in time and material. Yours respectively.

Erra Sauyer, Eq., Worcester, Mass.—Dean Sig.: We have used one of B. Fitts' Fatont Magnetic Metal Separators and it gives us satisfaction, effect ing a saving in time and material. Yours respectively, it is use.

We have used one of B. Fitts' Fatont Magnetic Metal Separators water wa

CHAS. BENEDICT.

From Union Water Meter Company, Worcester,
Fe have used one of B. Fitts' Patent Magnetic Metal
arators for eighteen months, and can recommend
is the best thing we have ever seen for separating
tals, and have no doubt it has more than paid for
talf in its use. UNION WATER METER CO.
FORCESTEE, Sept. 1, 1879.

J. C. OTIS, Treas.

fully,

From Brown & B.

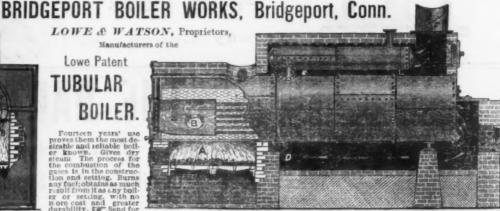
Exra Sasvyer, Esq., W.

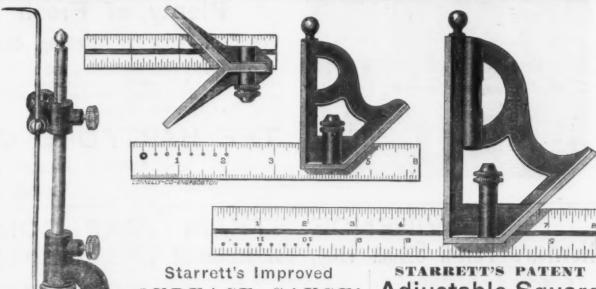
Exra Sasvyer, Esq.,

Manufactured by EZRA SAWYER, 33 Hermon Street, WORCESTER, MASS.



Lowe Patent TUBULAR





SURFACE GAUGE!

Can be quickly and accurately adjusted to lay out work for every conceivable purpose a gauge is used for.

Adjustable Square

Includes Mitre, Plumb and Level, also the best Cen-tre Square made. One is a complete substitute for a full set of the old style squares, and warranted accurate.

Children Chi

L. S. STARRETT, Athol, Mass. PATENTEE AND SOLE MANUFACTURER.

Send for Catalogue.



Press Screws, &c.,

Cast with Perfect Seamless Thread by our New Patent Process.

Cheaper than Wrought Iron, not so apt to Bend or Strip the Thread. LIBERAL DISCOUNT TO THE TRADE.

SEEGER MFG. CO., Box 1513, Springfield, Mass. H. E. ASHCRAFT, Agt., 12 Murray St., & 15 Park Place, New York.



The Iron Age Directory and Index to Advertisements.

| and Index to Advertisements. |
|--|
| Agricultural Implements. Grant Fan Mill and Cradle Co Melrose, N. Y |
| Towa Farming Tool Co., Fort Blatison, Iowa Air Compressors. Clayton Steam Pump Works, 14 and 16 Water st., Brooklyn, N. Y. McLaren John, Hoboken, N. 3. The Norwalk Iron Works Co., S. Norwalk, Conn., 28 |
| Air Cumps, Philadelphia Do |
| Weindel I., Finderburg S. Alarm Money Drawers, Fucker & Dorsey, Indianapolis, Ind |
| A division in the division of Datroit Wigh |
| A wils, Manufacturers of. Cheney Anvil and Vise Co., Detroit, Mich |
| Conway T. G., 30 Chambers, N. Y. Eaton E. E., Chicago, III. Field Alfred & Co., 93 Chambers, N. Y |
| Lovell John P. & Sons, Easton, Mass |
| The Chalmers-Spence Co., Foot oth st., E. R., N. Y. 38 Axies, Springs, &c., Manufacturers of. Cook R. & Sons, Winsted, Conn |
| |
| Springer State Sta |
| St. Louis wire rence Co., St. Louis, Mo |
| Thorn Wire Heage Co. Checaso III Barrel Machinery. Crossley H. A. Cleveland, O. Burrel Trank Atlanchments. Pancoast & Maule, Philadelphia, Pa. 31 Bellows, Manafacturers of. Scott Geo. M. Chicago, III. 8 |
| Bells (Sleigh, Bevin Brox, Mfg. Co., Easthampton, Conn |
| Belting, Maker of Co., 55 Chaines, 8, 15 Belting, Makers of Co., 55 Chaines, 8, 15 Alexander Bros., 12 N. 34, Philadelphia |
| Bicycles. |
| Bird Cages. Makers of. Gunther G., 46 Park Place, N. Y |
| Pope Mfg. Co., 507 Washington, Boston So Bird Cages, Makers of. Gunther G., 46 Park Place, N. Y. Jewett John C. & Sons, Buffalo, N. Y. Jewett John C. & Sons, Buffalo, N. Y. Jewett John C. & Sons, Buffalo, N. Y. Jewett John C. & Congress of Sons, Buffalo, N. Y. Jewett John S. German S. Jewett John S. Bridgeport, Conn. Jewett John S. |
| Fray John S., Bridgeport, Cond. 31 Millers Falls Co., 74 Chambers, N. V. 27 Blocks, Tackle, Makers of, Bagnall & Loud, Boston, Mass. 47 |
| McMilian Win. H. & Bro., 113 South, N. Y |
| |
| Beilers, Steam. Duplex Safety Boiler Co., 34 Cortlandt, N. Y |
| Coles H. H. & Co., Philadelphia, Pa |
| Bolts- American Bolt Co., Lowell, Mass |
| Rayner J., foot Houston st., East River, N. Y90 |
| Brass, Manufocturers of. Ansonia Brass and Copper Co., 10 Cliff, N. Y 2&q Bridgeport Brass Co., Bridgeport Conn 3 Brown & Bross, 8: Chambers, N. Y 3 Davol John & Sons, 100 John, N. Y 3 Detroit Copper and Brass Bolling Mills, Detroit, 2 |
| Detroit Copper and Brass Bolling Mills, Detroit, Mich. 2 Frey & Broomell, York, Pa. 43 Holmes Roots & Haydens, 40 Chambers, N. V. 38:10 |
| Mich. 2 Froy & Broomell, York, Pa. 43 Holmes, Booth & Haydens, 40 Chambers, N. Y. 2&19 Merchant & Co., 507 Market at. Philm. 39 Flume & Atwood Affe, Co., 18 Hurray, N. Y. 2 Rome Iron Works, Rome, N. Y. 2 Beovill Mfg. Co., 12 Broome, N. Y. 2 Waterbury Brass Co., 296 Broadway, N. Y. 2 |
| Waterbury Brass Co. 296 Broadway, N. Y |
| Brass Wire Cleth.
Howard & Morse, 45 Fulton, N. Y |
| Bridge Builders. Moseley Iron Bridge and Roof Co 5 Day. N. Y 4 Buckets for Chain Pumps. Crosby A. D., Cuba, N. Y |
| Buckets for Chain Pamps. Crosby A. D., Cuba, N. Y. Builders' Hardware. Clark Mrg. Co., Buffalo, N. Y. Butcher and Shoe Railves. Manufacturers of. Wilson John. Sheffield, England. 18 |
| Sutis and Hinges. American Solral Spring Butt Co., 82 Beekman N. Y. so New England Butt Co., Providence, B. I |
| Sanin Mir. Oo. Now Britain. Conn |
| Carriage Bolts. Makers of.
Haslett F. M. & Co., Allegheny, Pa |
| Townsend, Wison & Hubbard, Philadelphia. 47 Carriage Hardware. Makers of. Smith H. D. & Co., Plantsville, Conn. 12 The E. D. Clapp Mr. Co., Alburn, N. V. 88 Wilcox & Howe, Sirmingham, Unn. 99 Carriage Springs. Dexter Spring Co., Hulton Pa. 36 Oar Axies. Roberts A. & P. & Co., 265 S. 4th, Philadelphia. 5 |
| Wilcox & Howe, Mirmingham, Uhna |
| Roberts A. & P. & Co., 265 S. 4th, Philadelphia 5 Casters. Phornix Caster Co., Indianapolis, Ind |
| Cheney S. & Son, Manlius, N. Y |
| Phornix Caster Co. Indianapolis, Ind |
| Castings. Steel. Chester Steel Castings Co., 407 Library, Phila., Pa. 50 Eureka Cast Steel Co., Chester, Pa |
| Pittsburgh Steel Casting Co., Pittsburgh, Pa., 50 Chains, Manufacturers of Bradlee & Co., 816 Richmond St., Phila., Pa., 5 Bradlee & Co., 816 Richmond St., Phila., Pa., 5 |
| Queen City sfalleable from Co., Cincinnati, C. 6 Castings. Steel. Chester Steel Castings Co., 4c7 Library, Phila., Pa., 5c Eureka Cast Steel Co., Chester, Fa |
| Morton Thomas, 6: Elizabeth, N. Y44 |
| Cary & Moen, 234 W. 29th, N. Y |
| Coal. Miners of. Pardee A. & Co., 11 Broadway, N. Y. 2 oal Hods and Vascs. Jewett John C. & Sons, Buffalo, N. Y. 30 Griffiths Geo., Phila. Ps. New York Stampling Co., 31 Ave. A. N. Y. 45 Pierce Geo. N., Buffalo, N. Y. Coßee and Spice Lane Brothers, Millbrook, N. Y. Enterprise Mrs. Co., Philadelphia, Ps. 34 |
| New York Stamping Co., 311 Ave. A, N. Y |
| Titleton Francis 220 S Third Phila |
| Vempases and Dividers, Manufacturers of. Bemis & Call Hdw. & Tool Co., Springfield, Mass., 37&40 Stevens J. & Co., Chicopee Falls, Mass., 36 Copper. |
| Merchant & Co., 507 Market st., Fullia |
| Elizabethport Steam Corunge Co., 40 South, M. 139 |
| Hubbell R. Northville, N Y 44 Corners, Window and Door Screen. Porter Mrs. Co Burlington, Vt 19 Corn Husisers. Chambers, Burling & Quinian, Decatur, Ill 12 |
| Corrugated iron. Moseley Iron Bridge and Roof Co., 5 Dey. N. Y 4 |
| Cotters and Cotter Reys. Browning, Sisum & Co., 85 Chambers, N. Y |
| Cupolas. |
| Smith & Sayre Mrs. Co., 248 Broadway, N. 1. 49
Cutlery, Importers Office of the Co., 101 Duane, N. Y. 4045
Bradford & Anthony, Boston, Mass. 11
Clatworthy F. & W., 32 Chambers, N. Y. 18
Field Alfred & Co., 93 Chambers, N. Y. 18
Friedmann & Lauterlung, 91 Chambers, N. Y. 18 |
| Field Alfréd & Co., 93 Chambers, N. Y |
| FUFICES, Dalluister & CO., Newark, N. J |

| 7 | C |
|--|-----------|
| John Russell Cutlery Co., 25 Chambers, N. Y | E |
| N. Y | |
| Yale Lock Mg, Co., 53 Chambers, N. Y | E |
| Ding Collars Section | |
| | |
| Ives Hobart B. New Haven, Ct | 6 |
| Delong & Shroder, Warren, Ills | E |
| Roebuck S. & Co., 164 Fullon, N. Y | 1 |
| Ives Hobart B., New Haven, Ct 20 Door and Gate Springs. Bartlett Frederick, Freeport, Ills. Butler Door Spring Co., Cleveland, O., Delong & Shroder, Warren, Ills 18 Mohr, J. A. & Co., Manchester, Iowa 32 Peerless Door Spring Co., Cincinnati, O., Roebuck S. & Co., io, Fullon, N. Y. 12 Van Wagener & Williams, 82 Beekman, N. Y., 50 Drilling Machines, Makers of, Folger Mrz. Co., Springfield, O., Sellers Win. & Co., Phila and 79 Liberty st., N. Y., 40 Sintz Clark, Springfield, O., Thorne, De Haven & Co., Philadelphia 48 | I |
| Selfers Win. & Cô. Phila. and 75 Liberty st. N.Y. 45 Sintz Clark, Springfield, O. Thorne, De Haven & Co., Philadelphia. 44 Wiley & Russeli MR, Co., Greenfield, Mass. 32 Bave Trough Hangers. Heartley & Demsey, Toledo, Ohlo. 40 Edge Tools. Makers of. Doscher M. & Chambers, N. Y. 40 | I |
| Egg Benters. | |
| Standard Manufacturing Co., Boston, Mass | I |
| Clem & Morse, Philadelphia, Pa | |
| Stokes & Parrish Philadelphia | |
| Stokes & Pairish. Philadelphia. 48 Bievator Buckets, cowland T. F., Brooklyn. N. Y. Bmerv and Kmerv Wheels. Irvine, Townsend & Co., 123 Chambers, N. Y. Lehigh Valley Emery Wheel Co., Welssport, Fa., 50 Rogers J. F. & Co., 107 Liberty, N. Y. Walpole Emery Mills, Boston, Mass. 39 Ragineers, Mapplies. Bowers W. H. H., Salt Lake City, Utah. 34 Rogers J. F. & Co., 107 Liberty, N. Y. Buglines, tims. 49 Ragines, tims. | |
| Walpole Emery Mills, Boston, Mass | |
| Rogers J. F. & Co., ro Liberty, N. Y | |
| Baldwin Locomotive Works, Philadelphia, Pa 6 Engines, Steam, Makersof, Cox & Sons, Philadelphia, Pa | |
| Ervien Chas. W. & Co., Philadelphia, Pa | 1 |
| New England Mach y Depot, 36 N. 3d, Phila | 1 |
| Baldwin Locomotive Works, Philadelphia, Pa. 6 Busines, Steam, Makers of. Cox & Sons, Philadelphia, Pa | 1 |
| Mast, Foos & Co., Springfield, O | - |
| Paxson J. W. & Co., 514 Beech, Phila | |
| Mast, Foo & Co. Springfield, O. 39 Ragaravers. West. 31 Facings. Foundry. 31 Facings. Foundry. 31 Whitehead Bros. 417 W. 14th. N. Y. 3 Whitehead Bros. 417 W. 14th. N. Y. 3 Bohren U. & Co., 26 W. 27th. N. Y. 47 McNao & Harlin Mfz. Co., 39 Gold. N. Y. 47 Faucers. Self-Measuring, Makers of. 47 Faucers. Self-Measuring, Makers of. 47 Faucers. Millbrook. N. Y. 59 Lane Bros. Millbrook. N. Y. 59 Fencing. &c. 59 | 1 |
| Enterprise Mg. Co., of Pa., Phila. and N. Y | |
| Filed Alfred & Co. 93 Chambers, N. Y | |
| Files, Manufacturers of. Auburn File Works, 8c Chambers, N. Y | |
| Fenering, Acc. Cleveland Wrought Iron Fence Wits., Cleveland, O.II Fites, Importers of. Field Alfred & Co. 93 Chambers, N. Y. 13 Field Alfred & Co. 93 Chambers, N. Y. 13 Field Alfred & Co. 93 Chambers, N. Y. 14 Fites, Manufactor Co. 94 Fites, Manufactor Co. 95 Fites, Man | |
| Johnson & Bro., r Commercial, Newark, N. J. 8 McCaffrey & Bro., r 22 and r 24 N. 4th, Phila. 8 New American File Co., Pawtucket, P. 7 | |
| Nicholson File Co., Providence, R. I | |
| The J. Barton Smith Co., Philadelphia, Pa | |
| Filters. Jewett John C. & Sons, Buffalo, N. Y. Fire Brick, Mazers of Borgner & O'Brien, Philadelphia, Pa. 44 Colson Chas, D., Chicago, Ili. 44 Gardner sirothers, Pittsburgh, Pa. 44 Hali & Sons, Buffalo, N. Y. 45 Hali & Sons, Buffalo, N. Y. 46 Hali & Sons, Buffalo, N. Y. 47 Miller S. P. & Son, Philadelphia, Pa. 48 Newton & Co., Albany, N. Y. 49 Ostrander James & Son, Troy, N. Y. 40 Humington S. A. to and 4s Broadway, N. Y. 41 Union Mining Co., Philadelphia, Pa. 42 Valentine M. D. & Bro., Woodbridge, N. J. 43 Watson Fire Brick Co., Perth Amboy, N. J. 44 Flint and Emery Paper and Clotz, Baeder, Adamson & Co., 79 Market, Phila Broages, Portable, &c. 47 Holt Mg. Co., Coveland, O. Keystone Portable Force Co., 28 Carter, Phil. 37 Pergings, Fron and Steet. | |
| Gardner skothers, Pittsburgh, 12 44
Hall & Sons, Buffalo, N. Y. 44
Kreisener B. & Sons, foot of E. Houston St., 41 | |
| Maurer Henry, as East 2ad, N. Y. 44 Miller S. P. & Son, Philadelphia, Pa. 44 Newton & Co., Albany, N. Y. 44 Ostrander James & Son, Troy, N. Y. 44 | I |
| Rimington S. A., 40 and 42 Broadway, N. Y. 41
Union Min'ng Co., Philadelphia, Pa. 44
Valentine M. D. & Bro., Woodbridge, N. J. 44 | I |
| Watson Fire Brick Co., Perth Amboy, N. J. Flint and Emery Paper and Clets, Baeder, Adamson & Co., 730 Market, Phila | |
| Buffalo Forge Co., Buffalo, N. Y | I |
| Forgings, Iron and Steet. Hubbard Charles, 46 Cliff, N. Y | J |
| Foundry Supplies, | L |
| Emerick J. A. & Co., Philadelphia, Pa. 3 Furnaces, Makers of, Richmond & Potts, 179 S. 4th. Phila., Pa. 5 Furnace Charrins Neale. 5 Furnace Charrins Neale. 47 Furnace Hoists. 47 Furnace Hoists. 47 Furnace Shields. 68 McDonald H. Pittsburgh, Pa. 46 Furniture Springs. 46 Furniture Springs. 46 Furniture Springs. 47 Garden Tools. 5 Dunlap C. W. & Co. 43 Chambers. N. Y. 59 Grante Iron Ware. 55. Louis Stamping Co., 55. Louis Stamping Co., 55. Louis Stamping Co., 55. Louis, Mo. 15 Grante Hars. 56. | L |
| Furnace Holsts. Stokes & Parrish. Philada., Pa48 Furnace Shields. | L |
| Furniture Springs. Cary & Moen, 234 W. 29th, N. Y | L |
| Dunlap C. W. & Co 43 Chambers. N. Y | L |
| Grate Bars. Creswell David S., Philadelphia, Pa | L |
| Creswell David B. Fhiladelphia. Pa. 47 Grindstones. Atlanson R. & Co., Newcastle-on-Tyne, Eng. 31 Atlansic Stone Co., Boston, Mass. Lombard & Co., Boston, Mass. Lombard & Co., Boston, Mass. Cohio Grindstone Co., Cleveland, O. 31 Wood Walter R., 26: and 28; Front, N. Y. 31 Gunpowder, Makers of, Lafie & Rand Powder Co. 29 Murray, N. Y. 37 Hammers. | |
| Ohio Grindstone Co., Cleveland, O | |
| Hammers. Hartford Hammer Co., Hartford, Ct | 31 |
| Lafib & Rand Powder Co. 20 Murray, N. Y. 37 Handmers, Hance Co. Hartford, Ct. 12 Handles, Hammer Co. Hartford, Ct. 13 Handles, Handles, &cc. Hundley & Hanks, 79 Reade, N. Y. 31 Hangers, Harn Door, Kidder Slide Door Hanger Co., Romeo, Mich. 19 Moore S. H. & E. Y., Chicago, Ill. 30 Terry Mg. Co., Dundee, N. Y. 10 Terry Mg. Co., Dundee, N. Y. 12 Tield Affred & Co., a Chambers, N. Y. 12 Tield Affred & Co., a Chambers, N. Y. 16 Oraham & Haines, 113 Chambers, N. Y. 17 Hymes David & Co. ao Church, N. Y. 17 Hymes David & Co. ao Church, N. Y. 17 Siedel J., Habana, Cubs. H. 194 Hardware Importers. Beker Hermann & Co., Buffalo N. Y. 19 Hardware Importers. | |
| Moore S. H. & E. Y., Chfcago, III. 35
Terry Mfg. Co., Dundee, N. Y. 37
Hardware Commission Merchants. | |
| Field Alfred & Co., or Chambers, N. Y | |
| Hymes David & Co., og Church, N. Y | 1 |
| Lioyd, Supplie & Walton, 625 Market, Phila27
Shepard Sidney & Co., Buffalo N. Y | |
| Field Alfred & Co. or Chambane W W | 200.00 |
| Enterprise Mg. Co., Phila. 30
Farrington J. M. & Co., 37 Warren, N. Y. 16
Flagler, Forsyth & Bradley, 298 Broadway, N. Y. 19 | DI |
| Jon sings C. E. & Co., oo Chambers, N. Y | M |
| Russell & Erwin Mfg. Co., 45 Chambers, N. Y. Lo
Shepard Hardware Co., Buffaio, N. Y.
Stanley Works, New Britain, Cons. 32 | 74 |
| McCoy & Sanders, 12 Duano, N. Y. 18 Hardware Manufacturers. Enterprise Mfz. Co., Phila | 1 |
| American machine Co., 128 Chambers, N. Y | - |
| Claveland Wrought Iron Fence Works, Cleveland, Oir Kysor & Rex, Philadelphia, Pa. 27 Shepard Sidney & Co., Buffaio, N. Y. 13 Spence & Underhill, of Chambers, N. Y. 13 Tower John J., & Chambers, N. Y. 12 Wollenack J. F., Chicago, Ill. 46 | 1 |
| Tower John J., 96 Chambers, S. Y | DE |
| Covert Mfg. Co. West Troy, N. Y | M |
| Holt Hiram & Co., East Wilton, Mo | M |
| Stanley Works, New Britain, Conn | m |
| Bruce George W., i Platt, N Y | I |
| Huisting Eugines, Makers of. Crane Bros., Mfg. Co., Chicago, Ill. 48 Frisble D. & Co., Philadelphia, Pa | 0 1 2 2 2 |
| The Norwalk Iron Works Co., 2. Norwalk, Conn., 48 Hoisting Machines. Box Aifred & Co., 312 Green, Phila | E |
| Harrington Edwin & Son, Philadelphia, Pa. 49 | 9,5,00 |

| | | | | | | A | | |
|----------------------------|---|-------------------------|---------------------------|--------------------------|-------------------------------|--|-----------------|-----------------------------|
| orse
Walds | Hay
ron Joh | Fork | uney. | Pa | | , Mass
, Vt
, N. Y
Shoe Cobhia, Pa.
dence, R | | 37 Mi |
| orse
Bridge
Essex | Nails,
ewater
Horse | Mak
Iron
Nail | Co | Bridge
roy. | ewater | , Mass | | 7 L |
| EP Na
Nation | nal Hor | Cleve | land,
all Co. | O
Ver | renner | . Vt | | 40 U.
27 Min
12 Ja |
| Orse | Shoes | , Ma | kers o | Steel | Horse | Shoe Co | o., Bos- | Mo
E. |
| Keyst
Rhode | one Ho | rae S
I Hor | noe Co | o., Ph | lladel
Provi | hia, Pa.
dence, R | Ĭ | 5 Mo |
| The B | nberge
urden l
last f | r&C
Iron (| O., PH | roy, N | gh, Pa | | | 4 Pa |
| Withe
ydra
McLes | row & | Gord | on, P | ittsbu | rgh, P | a | ****** | 41 Mo |
| Mohav
ydra | wk & H | acks | n Mfg | . Co | Water | ford, N. Y. | Υ | 44 Ri |
| Lyon
e Cr | E. & Co | Free | B Gra | nd, N | Y | | | 49 Bo |
| White
e Cr | Moun | tain l | reeze | r Co., | Lacoi | iia, N. H. | | 8 Rd
8 Rd |
| fenks | James | . Deti | roit. N | lich | | | | 16 PI |
| Hartf | nce, H | am B | niler! | nanec | tion & | Insuran | ce Co | NIC |
| lox. J | r., Jus | V. & C | Co., | 353 W
8 S. 4t | ainut.
h, Phi | Phila
laa
Mass | ******* | 5 Nie |
| Lunde | ll Cha | B. G. G | Swed! | sh), E | baton, | Mass. Ma | | Non
No
No
No
No |
| Alban
Allent
Birmi | y & Re
own R | nssel
ollini
Roll | aer Ir
z Mill
ing M | Co., Z | Miente
Loui | wn. Pa. | N. Y | 5 At |
| Britto
Burde
Carne | n Iron
n Iron
gle Bro | Comp | steel (| Troy, | N. Y., | na, Ohio. |
Pa | 6 Ha |
| Elba I
Keyst | ron an | d Bol | Mill, | Limit | ed, Pi | tsburgh, | Pa | 43 St. |
| leona
Monto | rd Joh
ur Iro | n. 450 | West
teel C | St. N | nville. | Pa | | 4 Oil
OH |
| Phoen
Roane | ix iron | Co., C | Hing
410 W | MIR C
ainut,
100ga | o. Chi
Phila
Tenn | cago. III.
delphia . | | Ge Ore |
| Rowls
Rowls | Merchand Jar | ant In | Co., | lis, R | ome, N
Detaw | are ave., | Phila. | FO OX |
| hoen
The P | berger
assaic | & Co
Rollin | , Pitti | burg
I Co., | h, Pa.
Pater: | on, N J. | | 4 Iv |
| Wood
Zug & | Alan & | ttsbu | Arch. | Phili | delph | ia | *** * | 4 Pa |
| on H
Boynt | roker
on Geo | 8.
A., 7 | o Wal | l, N. S | Y | | | 4 Pa |
| Pox & | Drum
det P. | w. & | Co., 1 | all, N
Broad | . Y | nd Wall
a, Pa
B.
Mass, | N. Y. | Pai |
| on, (| Joseph
Charco
Il Chas | P. & | Co., Farm
Swed | or Co | lelphia
la Blas
loston | a, Pa
st.
Mass. | ****** | 4 Par |
| on C | ommi
J. F. A | w. & | Mer
52 We | chan | itam. | N. Y | | 6 Pat
4 Pat
Ki |
| leld leber | Alfred
ton & (| & Co. | os Ci
hilade | elphia | ers, N. | ¥ | | 8 Per |
| unde
Mohr | ll Cha
J. J., 43 | a. G.,
Wa | Bosto
inut, l | n, Ma
Philac | ss
lelphi | | | 6 Per |
| Wister
on D | r L. & l
ealers | R., 230 | Sout! | h Fou | nilade | iphia
hil-delpi | hia | S Pi |
| Abeel
Adam
Jonne | Brothe
s Hugh
dl. Bots | W. & | Sout
Co. | h N.
56 Pir | Y | Y. Iphia hil_delpi Y. Y. Y. V. Y. V. Y. V. Y. V. V. Y. V. | ******* | 4 Pie |
| orde
armi | n & Lo | vell, 7 | o and | 71 W | est, N | Y.
Cedar. N | Υ | Pin
Mo
Pin
Mo |
| ox J | ustice,
haw Al | ir., &
fred, | Co., I
Phila | Philad
delph | gton, I
leighia
ia, Pa. | , Pa | | 4 Me |
| iglest
Iarris
Iofim | on Bro
on & G
an J. V | B & C | 00., 16
n. 548 1 | Sout
to 562 | h, N. 1
Water | N. Y. | nhia | 4 Re |
| lubba | n B. F., | 457 B | Chiff,
nd 450 | N. Y.
Wate | er, N. | Y | | Pia
Bu |
| issbe | rger S.
erg Gi | A., 52 | 38 K1 | th, N | Y | Mass. | | Pin
St |
| unde
fiddle
aylo | eton W | B., 5 | John. | sh), B | oston, | Mass. N. Y. | | 6 Pin
Ha |
| eden
derso | at Wal | lace, | 8s, 87,
roady | 89 and | 1 91 El | m, N. Y. | ******* | Pec
Bo |
| uinc | John
ids, Ca | W & | Co. of | Will
nolds. | iam. N
Lond | Yon, Engl | ind | Pot
En |
| tichai
hime
wan . | rds D. V
r & Co.
John E | . Phil | Co., 92
adelp | Man
hia, I | gin, N. | A Middle | ehro' | Per Di |
| Vallac
stree | ts, N. Y | A So | & Co. | Alb | West, | d Wash | ngton | Be Bil |
| Phitn | ow A E | A C | 0 00 | Erando | att, N. | R | | 4 Me |
| ellair
lark | e Nail
E. W. | Work
Work
& Co., | ers of
ts. be
Phili | llaire, | O | Mass | | Pe
Th |
| villia
on. | il, Cha
mson J
heet. | ames | Swed
& Co | ish), F | Vall, N | Mass | | 6 Pri |
| loope
effer | mson Joheet. s & Me ts Mari all Iror W. D. I table Barnur | rry, 5 | 47 W. | oo Be | t., N. | Y
n, N. Y | * * * * * * * * | 6 Pai |
| Vood | W. D. | Fixt | Pitti | hurg | b. Pa | ********* | | 4 Pe |
| Towa | rd & M | | | | | orks, D | etroit, | 3 Do |
| bl Ge | n A A | Co | East ! | Kowa | ale M | J | • • • • • • • • | K Ma |
| eeger | Furi | o., S | pringi | Beld, 1 | Мава | | ******* | u Th |
| | | | | | | | | Rai |
| rentz
Iowai | R. E., s, sel J. F, rd & Mo | Phi | ladelj
15 Ful | phia,
ton, N | Pa | | | 7 Bla |
| loy J. | Mowe
Supple
Foos & | co. 8 | Valto | n. Phi | ladelp
Oblo | hia, Pa | | Clo |
| nd,
J. S. S | meltin | g Wo | rks. P | hilad | elphia. | Pa | | Go
He
16 Jo |
| nder | donk E | PERF | B. | | | | | Le Ma |
| Dissto | | T & S | ons. | Philad | lelphi | | | Ra: |
| lvn. | nan W | ilson, | Broa | dway | and K | ossuth, I | Breok- | Rai
Fli |
| . K. | at Mc(
Miller
Lock C | Lock
o., Te | Co., I | hilad | lelphia | . Pa | | Pin Hav |
| tillebi
lomer
mith | & Co., | Woli
New
Mf= | ark, ? | Sth. | Philad | clohia
Conn.
Y | | GI GI |
| ale L | ock Mi | g. Co | , €3 C | hamb | ers, N. | Y | | 2 He |
| arnes | W. F. | w Ha | hn, R | onn. | rd, III | oklyn | | 6 Old |
| ox Al | & Blak | Co e, Ne | wark, | een, F
N. J. | bila. | er er | | 8 Bla |
| arvin
B. F | E. E. | k Co. | 130 C | entre | N. Y. | adelphia | Pa | 8 Rol |
| onaw
eerle | ngland
sa Pun | Maci
ch ar | hiner;
ad Sh | r Fep
ear Co | ot, Phi | H
adelphia
ord. N. Y
ladelphi
W. Liber | a. Pa.3 | Rul
Sta |
| New | York.
urgh M.
Machin | fg. Co | ., Piti | abura | rh. Pa. | | 4 | Sad
En |
| ogers
A. V | J. F. d | (Co., | ne Co | berty | N. Y. | N. Y | 4 | 9 Pa |
| tokes
tow F | & Pari | rish, l
Shai | hilad
t Co., | and
Limi | 79 LIb
ted, 14 | N.Y
erty st.,
hiladelph
etown, C | ia4 | Sap
Po |
| ork & | iles & l
rill Rol
Smith | bert A | r Pres
k Co
reland | No Week | | | 4 5 | |
| ittle (| Chas. E | sarn
so F | em's l | N. Y | Powe | | 1 | At |
| achir | ne Ber | ews. | Make | rs of. | | | | Bo |
| laisde | ell P. & | Co.,
Co., | Worce
312 Gr | ster. | plies. | elphia. P
lelphia, l
leinbers.
Pennsyl
Y | 84 | 7 Pe |
| ultar | d E. P. | . 14 D | Ham | Y | Philad | leiphia, i | 84 | Saw
6 Mil |
| arrin
ave., | gton E | elphi | Son, I | 5th s | l. and | Pennsyl | vania | 9 Die |
| ing J
ogers | M. & | Co. 1 | Water
107 Li | ford.
berty | ey. N.
N. Y.
, N. Y | ¥ | 2 | Saw
Bo |
| ellers
Ticker
Tright | Wm. & | Co., | Phila
Phila | and | 70 Libe | erty st! | N. Y4 | Fa
Sis
Scal |
| llets
Y. H | andle | and M | lallet | Work | 8, 456 1 | E. Houst | n | Bu
Ch
For |
| enfiel | d Block | aper | Lock. | port, | N. Y | Brooklyn | 3 | Ols
Pa |
| nt C | hoppe | PR. | Bale | imer | AV0 3 | Brooklyn | , N.Y.3 | Bers |
| naur | ing II | er, B | meni | in.
ore. M | d | | 31 | Rev
Scre |
| etroit | Conn | er an | A Ber | es P | olling | Wille Do | twoit | Sere |
| mich
leken
oldsn | son, Va | n Du | sen & | Co., 2 | and a | & Fulton | Y | Bru
Mil |
| ercha
ayior
orthr | & Co., | o., Ph | iladel
n. N.
terhu | phia. | onn | | 4 | Phi
Scre |
| helps, | Lodge
or Bro | & Co | ., CHE | t, bet. | John . | Fulton. | N. Y. | Bere |

| 1 | John Russell Cutlery Co., 25 Chambers, N. Y | Horse Hay Forks. Waldron John, Muncy, Pa | Mincing Knives. |
|-------------|--|--|---|
| | fohn Russell Cutlery Co., 25 Chambers, N. Y | Horse Nails, Makers of. Bridgewater Iron Co., Bridgewater, Mass | Mine Lamps. |
| D | Philadelphia Smelting Co., Ld., Philadelphia, Pa21
Ifferentiat Pulley Biocks.
Yale Lock Mfg, Co., 52 Chambers, N. Y | Essex Horse Nail Co., Troy, N. Y EP Nail Co., Cleveland, O. National Horse Nail Co., Vergennes, Vt. 27 Baranac Horse Nail Co., Plattsburg, N. Y. | Mineral Wool Co., 16 Cortlandt, N. Y |
| | og Collars.
Medford Fancy Goods Co., 96 Duane, N. Y 30
Iscount Tables. | Horse Shoes, Makers of.
Combination Iron Clad Steel Horse Shoe Co., Bos- | Molases Gates. |
| - | Medford Fancy Goods Co., 56 Duane, N. Y. 30 Iscount Tables. lennings N. H., Deep River, Conn. 22 Leigh E. B. St. Louis, Mo. 22 Cope & Stevens, 114 Chambers, N. Y. 18 Inner Pail and Lantern. Halght Joseph, Port Chester, N. Y. 13 por Helts. | on. Mass of the Charles Shoe Co., Philadelphia, Pa. 5
Keystone Horse Shoe Co., Providence, R. I. 11
Schoenberger & Co., Pittsburgh, Pa. 1
The Burden Iron Co., Troy, N. Y. | field, Mass Molding Sand. Emerick J. A. & Co., 1056 Beach, Philadelphia, Pa. Passon J. W. & Co., 514 Beach, Philadelphia, Pa. Schenectady Molding Sand Co., Schenectady, N.Y. Whitehead Bros 517 W. 15th, N. Y. Mouse Trans |
| D | inner Pail and Lantern.
Haight Joseph, Port Chester, N. Y | The Burden Iron Co., Troy, N. Y. Het Blast Stoves. | Whitehead Bros., 517 W. 15th. N. V. |
| D | oor Belts. ves Hobart B., New Haven, Ct | Witherow & Gordon, Pittsburgh, Pa | Mouse Traps. Dietz R. E. c, and c Fulton N. Y. Jones Claudius & Co., Erie, Pa. |
| of land one | ves Hobart B. New Haven, Ct. por and fante Springs. Bartlett Frederick, Freeport, Ills. Sutler Door Spring Co., Clevetand, O. belong & Shroder, Warren, Ills. (fohr, f. A. & Co., Manchester, Iowa | Mohawk & Hudson Mfg. Co., Waterford, N. Y44
Hydraulic Jacks.
Dudgeon Richard, 24 Columbia, N. Y | Smith & Egge Mig. Co. Bridgeport, Conn |
| 1 | Peerless Door Spring Co., Cincinnatt, O | Dudgeon Richard, 24 Columbia, N. Y. Lyon E. & Co., 470B Grand, N. Y. Lee Cream Freezers. Boebuck S. & Co., 164 Fulton, N. Y. | Rellarre Nall Works, Bellaire, Ohio. Fuller Bros. & Co., 133 Greenwich, N. Y. Oxford Iron Co., Sr. Washinston, N. Y. Rowland Jas. & Co., 225 N. Delaware, Ave., Phila. Schoenberger & Co., Pittsburgh, Pa. Zug & Co., Pittsburgh, Pa. |
| D | rilling viachines, Makers of, | Roebuck S. & Co., 164 Fulton, N. Y | Rowland Jas. & Co., 925 N. Delaware, Ave., Phila.
Schoenberger & Co., Pittsburgh, Pa |
| 7 | (horne, De Haven & Co., Philadelphia | Jenks James, Detroit, Mich | |
| 1 | Jeartley & Domsey Toledo Obio | I man I Manus de adecente de la | Hanson & Van Winkle, 92 Liberty, N. Y
Zucker & Levett, 40 to 44 West 10th st., N. Y |
| | Ooscher M 85 Chambers, N. Y | Levis Henry & Co., Philadelphia, Pa. | Norway Shapes, Rollers of |
| - 1 | tandard Manufacturing Co., Boston, Mass29 ectric Light. fuller Electrical Co., 44 E. 14th. N. Y | IPOD. Manufacturers of. | Rowland Wm. & Harvey, Frankford, Philadelphia |
| D) | lem & Morse, Philadelphia, Pa | Birmingham Rolling Mill Co., Louisville Ky | Nuts. Bolts, etc., Makers of. Altentown Rolling Mill Co., Allentown, Pa., Atwood Safety Nut Co., Springfield, Mass., Haskell W. H. & Co., Pawtucket, R. 1., 446. |
| | rane Bros. Mfg. Co., Chicago, III | Burden Iron Company, Troy, N. Y. Carnegle Bros. & Co., Limited, Pittsburgh, Pa.,, 43 Elba Iron and Bolt Co., Limited, Pittsburgh, Pa. | Hastett F. M. & Co., Allegheny, Pa. tussell. Burdsall & Ward. Port Chester, N. Y. Standard Nut Co., Pittsburgh, Pa. Sternbergh J. H., Reading, Pa. |
| B | evator Buckets, Sowland T. F., Brooklyn, N. Y | Keystone Rolling Mill, Limited, Pittsburgh, Pa | Sternbergh J. H., Reading, Pa. Oil Curs. Detroit Lubricator Mfg. Co., Detroit, Mich. |
| A LA BOLD | townand I. F. Brooklyn, N. Y. nerv and Emery Wheels, nervine, Townsend & Co., 123 Chambers, N. Y. 19 A. Sold Co., Weissport, Pa., 55 togers J. F. & Co., 107 Liberty, N. Y. 19 A. Sold Co., 107 Liberty, N. Y. 10 A. Sold Co., 108 Liberty, N. Y. 11 A. Sold Co., 108 Liberty, N. Y. 12 A. Sold Co., 108 Liberty, N. Y. 13 A. Sold Co., 108 Liberty, N. Y. 14 A. Sold Co., 108 Liberty, N. Y. 15 A. Sold Co., 108 Liberty, N. Y. 16 A. Sold Co., 108 Liberty, N. Y. 17 A. Sold Co., 108 Liberty, N. Y. 18 A. Sold Co., 108 Liberty, N. Y. 18 A. Sold Co., 108 Liberty, N. Y. 19 A. Sold Co., 108 Liberty, N. Y. 19 A. Sold Co., 108 Liberty, N. Y. 10 A. Sold Co., 108 Liberty, N. Y. 10 A. Sold Co., 108 Liberty, N. Y. 10 A. Sold Co., 108 Liberty, N. Y. 11 A. Sold Co., 108 Liberty, N. Y. 12 A. Sold Co., 108 Liberty, N. Y. 13 A. Sold Co., 108 Liberty, N. Y. 14 A. Sold Co., 108 Liberty, N. Y. 15 A. Sold Co., 108 Liberty, N. Y. 16 A. Sold Co., 108 Liberty, N. Y. 17 A. Sold Co., 108 Liberty, N. Y. 18 A. Sold Co., 108 Liberty, N. Y. 18 A. Sold Co., 108 Liberty, N. Y. 18 A. Sold Co., 108 Liberty, N. Y. 19 A. Sold Co., 108 Liberty, N. Y. 19 A. Sold Co., 108 Liberty, N. Y. 19 A. Sold Co., 108 Liberty, N. Y. 10 A. Sold Co., 108 Liberty, N. Y. 11 A. Sold Co., 108 Liberty, N. Y. 12 A. Sold Co., 108 Liberty, N. Y. 13 A. Sold Co., 108 Liberty, N. Y. 14 A. Sold Co., 108 Liberty, N. Y. 15 A. Sold Co., 108 Liberty, N. Y. 16 A. Sold Co., 108 Liberty, N. Y. 17 A. Sold Co., 108 Liberty, N. Y. 18 A. Sold Co., 108 Liberty, N. Y | Montour Iron & Steel Co., Danville, Pa | Oil Stones. Geo. Chase, 107th and Harlem River, N.Y |
| E | Naipole Emery Mills, Boston, Mass | Roran Caleago Rolling Mill Co. Chicago. III. 43 Phoenix I ron Co., 410 Wainut, Philadelphia Roane Iron Co., Chattanooga, Tenn Rome Merchant Iron Mils. Rome, N. Y Rowland James & Co., 220 N. Delaware avc., Phila. 5 Rowland James & Co., 220 N. Delaware avc., Phila. 5 Rowland Wm. & Harvey, Philadelphia Shoenberger & Co., Pittsburgh, Pa. The Passaic Rolling Mill Co., Paterson, N. J. Ulster Iron Works, 20 Broadway, N. Y Wood Alan & Co., Arch, Philadelphia Zug & Co. Pittsburgh, Pa. | Ores. Jackson Iron Co., Cleverand, 9. Pullman J., Wesley, 407 Wathut Philadelphia Read D. W. R. & Co., 2051/2 Walnut, Philadelphia |
| 8 | chleicher, Schumm & Co., Philadelphia | Rowland James & Co., 920 N. Delaware ave., Phila. 9
Rowland Wm. & Harvey, Philadelphia | Read D. W. R. & Co., 2014 Walnut, Philadelphia Ox Shoes. Ives, Woodruff & Co., Mount Carmel, Conn |
| E I | Baldwin Locomotive Works, Philadelphia, Pa 6 | The Passaic Rolling Mill Co., Paterson, N. J. Ulster Iron Works, oo Broadway, N. Y. Wood Alan & Co., Arch, Philadelphia | Ives, Woodruff & Co., Mount Carmel, Conn
Shadbolt, Boyd & Co., Milwaukee, Wis |
| 1 | urines, Steam, Makers of. Ox & Sons, Philadelphia, Pa | Zug & Co. Pittsburgh. Pa. | Paint.
Cleveland Iron O'e Paint Co., Cleveland, O.
Howell Charles H. & Co., Philadelphia. Pa. |
| 1 | a France Fire Engine Co., Elmira, N. Y. 47 ane & Bodley Co., Cincinnati, O. 47 New England Machin, Propost and N. 47 | Etting Edward J., Philadelphia, Pa.
Fox & Drummond, 68 Wall, N. Y. | Paint. Metallic. New York Iron Roofing and Paint Co., Cincin- |
| 1200 | a France Fire Engine Co., Eimira, N. Y. anne & Bodley Co., Cincinnati, O | Reed Joseph P. & Co., Broadway and Wall, N. Y. of Reed Joseph P. & Co., Philadelphia, Pa | nati, Ohio. Parers, Apple and Potato, Goodell Co. Antrim, N. H. |
| E | wiss Nelson W., New Haven, Conn | | Patent Solicitors. Howson & Son. Phila. and Washington, D. C |
| Bi | last, Foos & Co., Springfield, O | Field Alfred & Co., 93 Chambers, N. Y. | Pattern Letters and Figures. Knight H. W., Seneca Falls, N. Y |
| į | axson J. W. & Co., 514 Beech, Phila | Hernsheim L., 105 John, N. Y | Pens. Steel. Esterbrook Steel Pen Co., 20 John, N. V. Perfornfed Sheet Metals. Harrington & Oglesby Co., Chicago, Ill. |
| Pi | incets, Makers of. Sohren U. & Co., 259 W. 27th, N. Y. Schap & Harlin Mfg. Co., 20 Gold, N. V. | Richardson J. O., 223 Dock, Philadelphia | Kaufmann A., 36 Park Place, N. Y |
| of resident | Vintenad Bros., 47 W. 14th, N. Y. uncerts, Makers of, ohren U. & Co., 29 W. 27th, N. Y. eNao & Harlin Mfz. Co., 30 Gold, N. Y. ucerts, Self-Measuring, Makers of, futerprise Mfg. Co., of Pa., Phila, and N. Y. and Bros., Millbrook, N. Y. Specing, Mc. S. Specing, Mc. Specing, | Abeel Brothers, 190 South N. Y. Adams Hugh W. & Co. 56 Pine. N. Y. | Philadelphia. Picks, Makers of. Plerson & Co., 24 Broadway, N. Y. |
| 6 | Invaland Wannahit Inon Pance White | Carmichael & Emmens, recand and lodge N. W. | Pines, Fittings, etc., Makers of,
McNab & Harlin Mfg. Co., 56 John. N. Y |
| 1 | field Alfred & Co. 93 Chambers, N. Y | Cooney Daniel F. & Washington, N. Y. Cox Justice, Jr. & Cox Justice, J | Mellert Foundry and Machine Co., Limited, Read- |
| I | uburn File Works, 80 Chambers, N. Y | Harrison & Gilloon, 548 to 562 Water, N. Y. Hoffman J. W. & Co., 268 Fourth, Philadelphia | ing. Pa. Reading Iron Works, Philadelphia, Pa. Wood R. D. & Co., 400 Chestnut, Philadelphia |
| į | Sonton E. M., So Beekman, N. Y | Hubbard Chas., 46 Cliff, N. Y. Judson B. F., 427 and 459 Water, N. Y. | Plane Irons. Manufacturers of. Buck Bros., Millbury, Mass |
| ä | ohnson & Bro., 1 Commercial, Newark, N. J | Lissberger S. A., 529 E. 19th, N. Y. | Planes, Manufacturers of.
Stanley Rule and Level Co., 29 Chambers, N. Y |
| 1 | lew American File Co., Pawtucket, R. I | Lundell Chas, G. (Swedish), Boston, Mass. 4 Lundell Chas, G. (Swedish), Boston, Mass. 6 Middleton W. S., 52 John, N. Y. 6 Naylor & Co., 99 John, N. Y. 42 | Pinted Ware,
Hall. Elton & Co., 7c Chambers, N. Y |
| 9877 | aul Chas. B., Williamsburgh, N. Y. 8 pencer John & Son, Sheffield, England 18 he J. Barton Smith Co., Philadelphia, Pa. 8 laion File Works. Baltimore, Md. 8 | Sayor & Co., 99 Julin, N. Y. Ogden & Wallace, 8c, 6r, 6r, and or Elm, N. Y. Flerson & Co., as Broadway, N. Y. Flerson & Co., as Broadway, N. Y. Guiner John W. & C. Reynolds, Certer & Beynolds, London, England. 38 Richards D. W. & Co., oz Maneriak | Boker Hermann & Co., tot Duane, N. Y |
| 1 | ewett John C. & Sons, Buffalo, N. V | Reynolds, Corter & Beynolds, London, England. 43 Richards D. W. & Co., 92 Mangin, N. Y | Pots and Kettles. Ten and Coffee. Empire State Mig. Co., Buitalo, N. Y |
| | re Brick, Makers of.
lorgner & O'Brien, Philadelphia, Pa | Snimer & Co., Philadelphia, Pa.
Swan John E. & Bros., Ld., Glasgow & Middlesbro'. 16 | Dieneit & Eisenhardt, Philadelphia, Pa |
| ř | ardner Brothers, Pittsburgh, Pa | streets, N. Y. Warner A. B. & Son, 28 and 29 West, N. Y. Williamson James & Co., 69 Wall, N. Y. Whitney A. R. & Co., 48 Hudson, N. Y. | Bliss E. W., 167 Plymouth, Brooklyn |
| ñ | faurer Henry, 415 East 24d, N. Y. | Whitney A. R. & Co., 48 Hudson, N. Y. Iron, Pig, Importers of, Bellaire Nall Works, bellaire O. | Merrill Brothers, Brooklyn, N. Y. Merriman A. H., West Meriden, Conn. Nisacara Stamping and Tool Co., Buffalo, N. Y. Peerless Funch & Shear Co., rr. W. Liberty N. Y. Tho Stilles & Parker Press Co., Riddletown, Ct. |
| OHE | strander James & Son, Troy, N. Y. timington S. A., to and 42 Broadway, N. Y. inion Mining Co. Philadelphia, Pa. alentine M. D. & Bro., Woodbridge, N. J. Vatson Fire Brick Co. Perth Amboy, N. J. | Iron. Ply, Importers of, Hellisire Nail Works, bellaire, O. Clark E. W. & Co., Philadelphia, Pa., 6 Lundell, Chas. G. (Swedish), Boston, Mass. 6 Williamson James & Co., 60 Wall, N. Y. | The Stiles & Parker Press Co., Middletown, Ct |
| T | alentine M. D. & Bro., Woodbridge, N. J. 48
Vatson Fire Brick Co., Perth Amboy, N. J. 44
Int and Emery Paper and Clets. | Fron. Sheet. Manufacturers of. Hoopes & Merry, 547 W. 15th st., N. Y | Printing Presses. Kelsey & Co., Meriden, Conn. |
| Pe | that and Emery Paper and Clets, deter Admson & Co., 30 Market, Phila | Wood W. D. & Co. Pittahurgh, Pa | Pulleys. Hartford Engineering Co., Hartford, Conn 48&4 Penfield Block Co., Lockport, N. Y |
| i | Levstone Portable Forge Co., 218 Carter, Pail | Iron Stable Fixtures. E. T. Baraum's Wire and Iron Works, Detroit, | Pumps, Makers of. Douglas W. & B., Middletown, Conn. Hartford Compressed Air Pump Co., Hartford, |
| N MA | orgings, Iron and Steet.
Iubbard Charles, 46 Cliff, N. Y | Howard & Morse, 45 Fulton, N. Y | |
| 1 | indry Supplies,
Emerick J. A. & Co., Philadelphia, Pa | Jack Screws.
Seeger Mfz. Co., Springfield, Mass | Mast Foos & Co., Springfield, O.
Rumsey L. M. & Co., St. Louis, Mo.
Thompson, Epping & Carpenter, Pittsburgh, Pa
Union Mfg. Co., of Chambers, N. Y |
| E I | irnaces, Makers of.
tichmond & Potta, 119 S. 1th. Phila., Pa | Lamps Eurrace. Tarlor Boggis, Cleveland, O | Youngstown Measuring Pump Co., Youngstown, O.4
Rails. From and Steel. Makers of.
Allentown Rolling Mill Co., Allentown, Pa |
| 5 | tokes & Parrish Philada Pa | | Blakey & Walbaum, Philadelphia, Pa.
Cambria iron Co., Johnstown, Pa. |
| 3 | leDonald H. Pittsburgh, Pa | Lawn Mowers. LloyJ, Supplee & Walton. Philadelphia, Pa | Cambria iron Co., Johnstown, Pa.,
Carnegle Bros. & Co., Limited, Pittsburgh, Pa., 4
Cleveland Rolling Mill Co. Cleveland, Ohlo.,
Despard Brothers, 6c Wall, N. Y. |
| 21 | irniture Springs.
arv & Moen, 234 W. 29th, N. Y | U. S. Smelting Works, Philadelphia, Pa | Homanolm I see John N V |
| n l | t. Louis Stamping Co., St. Louis, Mo | Lemon Squeezers.
Onderdonk R., 405 Grand, N. Y44 | Joilet Steel Co., Chicago, III. Leavitt C. W., 137 Broadway, N. Y. Montour Iron & Steel Co., Danville, Pa |
| 2 | reswell David S., Philadelphia. Pa47 | Diseton Henry & Sons. Philadelphia44 Locks and h nobs.—Manufacturers of. | Field Alfred & Co., 93 Chambers, N. Y |
| | itainson R. & Co., Newcastle-on-Tyne, Eng31 tiantic Stone Co., Boston, Mass | Ivn. E. D | Razor Strops. Flagler, Forsyth & Bradley, 298 Broadway, N. Y Refrigerators. Lesley Alex, M., 380 Sixth Ave., N. Y |
| 300 | IcDermott & Berea Stone Co., Cleveland, O | Durrie & McCarty, 97 Chambers, N. Y. 27 D. K. Miller Lock Co., Philadelphia, Pa. 20 Eagle Lock Co., Terryville, Conn. 16 Hillebrand & Wolf, 150 S. 8th, Philadelphia. 20 Romer & Co., Newark, N. 7. | Rivets. |
| Į | affip & Band Powder Co. 20 Murray, N. Y 37 | Smith & Egge Mfg. Co., Bridgeport, Conn. 20 | Gilmor Wm., of Wm., Baltimore, Md |
| E | iartford Hammer Co., Hartford, Ct33
indles, Spokes, &c.
undles, & Hangs, 79 Reade, N. Y | 1 Xale Lock Mig. Co., 63 Chambers, N. V | Harrison C. F., Cuyahoga Falls, O.
Hoopes & Townsend, Philadelphia, Pa.
Old Colony Rivet Co., Kingston, Mass. |
| Section 2 | ingers. Barn Door.
ildder Slide Door Hanger Co., Romeo, Mich19 | Machinery. Add John, New Haven, Conn. Barnes W. F. & John, Rockford, Ill. ciliss & Williams 167 Plymouth, Brooklyn. Box Alfred & Co., 212 Green, Phila. | Townsend W. P. & Co. Pittsburgh, Pa |
| ů | rdware Commission Merchants | Forsath S. C. & Co., Manchester, N. H. | rarrel Foundry and Machine Co., Ansonia, Conn. 3 Roof Brackets. Wilder Mfg. Co., Gardner, Mass |
| 出版社 | rower & Leeds, 53 Murray, N. Y | Garvin E. E. & Co., 130 Centre, N. Y. L. B. Flanders Machine Works, Philadelphia, Pa., 46 Mohawk & Hudson Mg. Co., Waterford, N. Y 44 | Rolling Mills. Globe Nail Co., Boston Highlands, Mass 40 |
| HHS | leaton & Denckia Hdw. Co., 507 Commerce, Phisa.27
(ymes David & Co., 52 Church, N. Y | New England Machinery I epot, Philadelphia, Pa.37
Peerless Punch and Shear Co., 115 W. Liberty st.,
New York. | Rules, Manufacturers of
Stanley Rule and Level Co., 29 Chambers, N. Y3 |
| LS | irdware Bealers.
loyd, Supplee & Waiton. 625 Market, Phila | Pittsburgh Mfg. Co., Pittsburgh, Pa. 47
Purdy Machine Co., Cleveland, O. 49
Rogers J. F. & Co., 107 Liberty, N. Y. 40 | Enterprise Mfg. Co., Philadelphia |
| HH | irdware Importerm.
oker Hermann & Co., 101 Duane, N. Y40245.
jeld Alfred & Co., 03 Chambers, N. V. | Rogers J. F. & Co., 1ct Liberty, N. Y | Band Siffer. Pichlé Bros. Philadelphia Pa |
| É | rdware Manufacturers,
nterprise Mg. Co., Phila. | The Stiles & Parger Press Co., Middletown, Ct 50
Wetherill Robert & Co., Chester, Pa. | Sap Spouts, Sugar. Post C. C. Burlington, Vt. Record Mfg. Co., Conneaut, Ohio |
| | arrington J. M. & Co., 77 Warren, N. Y. 18
lagler, Forsyth & Bradley, 28 Broadway, N. Y. 19
lobe Mgc, Co., Middletown, Conn. 32
on vings C. E. & Co., 9c Chambers, N. Y. 39 | Machinery (Barnes's Foot Power.) | Morris Sash-Lock Mfg. Co., Cincinnati, O., Sawe, Makers of. Atking E. C. & Co., Indianapolis, Ind., |
| | | Machine Screws, Makers of, | Barry W. B. Indianapolis, Ind |
| H | ussell & Erwin Mfg. Co., 45 Chambers, N. Y | Fellows John. Williamsburg N. Y. 49 Machinists' Tools and Sapplics. Blaisdell P. & Co., Worcester, dass. 47 | Disston Henry & Sons, Phila |
| OTT | hepard Hardware Co., Buffalo, N. Y. tanley Works, New Britain, Conn. 37 lebout W. & J., 31 Chambeis, N. Y. renton Lock & Hardware Co., Treuton, N. J. 37 mon Mig. Co., 50 Chambers, N. Y. an Wagoner & Williams, & Beekman, N. Y. 60 | Blaisdell P. & Co., Worcester, fass. 47 Box Alfred & Co., \$12 Green, Philadelphia, Pa. 47 Box Alfred & P., 14 Dey, N. Y. Flanders L. B., 102 Hamilton, Philadelphia, Pa. 46 Geo. Piace Machinery Agency, 121 Chambers N. Y. 22 | Saws. Bracket. Millers Falls Co., 74 Chambers, N. Y |
| UV | nion Mfg. Co., 90 Chambers, N. Y. 37
an Wayoner & Williams, & Beekman, N. Y | Geo. Piace Machinery Agency, 121 Chambers, N. Y. Harrington E. & Son, 15th st. and Pennsylvania ave. Philadelphia Pennsylvania | |
| A | merican Machine Co., 128 Chambers, N. Y 10 | Geo. Place machinery Agency, 121 Chambers, N.Y. 22 Harrington E. & Son. 15th 81. and Pennsylvania ave., Philadelphia Pa | Saw Seis. Boynton E. M., & Beckman, N. Y. |
| 88 | hepard Sidney & Co., Buffalo, N. Y | Rogers J. F. & Co., 107 Liberty, N. Y. 49
Sellers Wm. & Co., Phila and 79 Liberty st., N. Y., 49
Wickersham & Co., Philadelphia, Fa | Saw Seis. Boynton E. M., So Beckman, N. Y. Sige Horace F., 100 Chambers, N. Y. Sige Horace F., 100 Chambers, N. Y. 41 |
| Ñ | Vollensak J. F., Chicago, Ill | Wright John H., Bridgeport, Conn47 | Seafes, Manufacturers of. Buffalo Scale Co., guffalo, N. Y. Charillon John & Sons, of Cliff, N. Y. Forsyth Scale Co., Youngstown, O. 27 Olsen Fintus & Co., Philadelphia. 32 Page, Fargo & Co., 35 Broadway, N. Y. Stienle dros., oth above Master, Phila. 43 |
| CG | rness Sunps. overt Mfg. Co. West Troy. N. Y | N. Y. Handle and Mallet Works, 456 E. Houston | Forsyth Scale Co., Youngstown, O |
| H | olt Hiram & Co., East Wilton, Mo. | Eddy Geo. M. & Co., 353 Classon Ave., Brooklyn, N. Y. 31 Ment Choppers, Kimball Shovel Co., Baitimore, Md | Morapers. |
| 8 | rater and Purifier, Feed Water, owe & Watson Bridgeport, Conn | Kimball Shovel Co., Baitimore, Md | Revolving Scraper Co., Columbus, O |
| B | ruce George W., I Platt, N Y | Metals. Detroit Conner and Press Polling Wills Posteria | Maken of |
| CH | g Kingers.
hambers, Bering & Quinlan, Decatur, Ill | Mich. Dickerson, Van Dusen & Co., 29 and 31 Cliff, N. Y 2 Goldsmith Moses & Son, Charleston, S. C. | Billerbeck J., 17th and Venango Sts., Philadelphia. 13 Bruce Geo. W., I. Platt, N. Y |
| CF | isting Eugines, <i>Makers of.</i> rane Bros Mfg. Co., Chicago, III | Merchant & Co., Philadelphia | Screw Cutting Machinery. Wiley & Russell Mrg. Co., Greenfield, Mas32 |
| | | Phelps, Dodge & Co., Cliff, bet, John & Fulton, N. Y. 2
Phosphor Bronze Smelting Co., Limited, 512 Arch,
Philadelphia. | Serew Drivers, (Improved) Makers of Disaton feury & Sons Phila |
| BDH | 1sting Machines. 2x Aired & Co., 312 Green, Phila. 49 unn J., Cleveland, O. 47 arrington Edwin & Son, Philadelphia, Pa. 49 ellers Wm. & Co., Phila. and 79 Liberty st., N. Y. 40 cokes & Parrish, Philada., Pa. 41 ele Loct Co., 53 Chambers, N. Y. 43 | Pintadelphia. Pintadelphia. 13 Arch, Pintadelphia. 13 Arch, Pintadelphia. 13 Qurves A. & Son, cor. South and Penn, Phila. 5 Qurves A. & Son, cor. South and Penn, Phila. 5 Acad D. W. & Co., 58 William. N. Y. 4 Acad D. W. & Co., 59 William. N. Y. 5 Schoenberg Setail Mig. Co., cs & 250 E. 20th, N. Y. 5 | Scythe Stones. N. Pike Station N. H. 36 |
| SISI | okes & Parrish, Philada, Pa
ale Lock Co., 52 Chambers, N. V. 49
ale Lock Co., 53 Chambers, N. V. | Schoenberg Metal Mig. Co., 528 & 530 F. 20th, N. Y. 2 | Shafting, Makers of. Akron Iron Co., Akron. Ohio Cresson Geo. V. Philadelphia, Pa. 97 Rogers J. F. & Co., tor Liberty, N. Y. 97 Seiters Win. & Co., Phila and J. Liberty st., N. Y. 98 Wood, Jennison & Co., Worcester, Mass |
| 2 | oks (Cotton & Bales),
ew York Handle & Mallet Works, 456 E. Houston13
res Clippers,
ker Herwann & Co 101 & 103 Duane, N. Y40&4;
cCoy & Sanders, 132 Duane, N. Y | Metallurgists. 600th, Garrett & Blair, 919 Cnant, Philadelphia 5 67itton J. Biodgett, 330 Walnut, Fhiladelphia 36 Metal Separator. | Cresson Geo. V., Philadelphia, Pa |
| 100 | | Metal Separator,
Sawyer Esra, Worcester, Mass31 | Wood tennison & Co., Worcester, Mass |

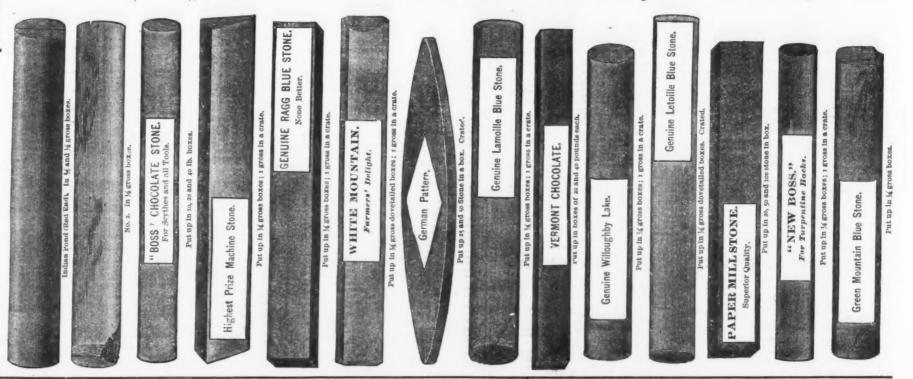
| | Shears, Iron. |
|--------------------------------|--|
| | Shears, Iron. Cleveland Hardware Co., Cleveland, O |
| | Creed Geo. H., 103 Reade, N. Y |
| Spring- | Shovet's Spudes and Scoops. Griffith Geo, Philada. Pn. 20 Fettebone Payne & Son, Wyoming, Ps. 30 Shutters, Steel and Wood. Shutters, Steel and Wood. |
| ia, Pa. 1
Pa 5
y, N.Y. 3 | Clark, Bunnett & Co., to 2 W. 27tb. N. Y |
| y, N.Y. 3 | |
| 50
27
37 | Vermont Snath Co., Springfield, Vt |
| 39 | Speiter. Manning & Squier, 11, Liberty, N. Y |
| Phila. 5 | Hernsheim L., 105 John, N. Y. Wright Peter & Sons, Philadelphia. |
| | |
| Y 31 | Springs. Cary & Moen, 34 W. 20th. N. Y. Gautier Steel Department of Cambria Iron Co. J. hnstown, Pa. Rowland wm. & Harvey, Frankford, Phila. |
| Y31 | Rowland wm. & Harvey, Frankford, Phile |
| elphia 50 | Michael A. M., Albany, N. Y. Steam Hammers, &c., Makers ot, Dieneit & Eisenhardt, Philadelphia, Pa., 48 Dudgeon Richard, 2t columbia, N. Y. Steam Pumps, &c., Manufacturers of, Cameron A. S., East 2nd, N. Y. Clayton Steam Pump Works, 14 and 16 Water st. Brooklyn, N. Y. Crane Bros. Mic. Co., Chicago, III., 48 Storer G. W., 122 A. J. Ph. Heelmatt, O., 48 Storer G. W., 122 A. J. Ph. Heelmatt, O., 48 Storer G. W., 122 A. J. Ph. Heelmatt, O., 48 Storer G. W., 122 A. J. Ph. Heelmatt, O., 48 Storer G. W., 122 A. J. Ph. Heelmatt, O., 48 Storer Traps, Frovidence Steam Trap Co., Providence, R. I., 33 Steel Importers. |
| 5 | Cameron A. S., East 23d, N. Y. Clayton Steam Pump Works, 14 and 16 Water st. Brooklyn, N. Y. |
| 41
41&47
47 | Crane Bros. Mfz. Co., Chicago, III. 48
McGowan Jonn H. & Co., Chachmati, O. 48
Storer G. W., 122 N. 3d. Philagelphia. 27 |
| 47 | The Norwalk Iron Works Co., So. Norwalk, Ct., 48 Steam Traps, Providence Steam Trap Co., Providence, R. I., 33 |
| 31 | Providence Steam Trap Co., Providence, R. I. 33 Steel Importers. 42 Hobson Francis & Son, 07 John, N. Y |
| 6
phia., 5 | McCoy & Sanders. 132 Duane, N. Y. 18 Pierson & Co., 24 Broadway, N. Y. 4 Wolff, Kahn & Co., 93 John, N. Y. 42 |
| 7 | Hubbard Chas, 40 Cliff, N. Y. Jones B. M. & Co., 11 and 13 Oliver, Hoston, Mass. 42 |
| 49 | Steel Manufacturers. Albany & Rensselaer Iron & Steel Co., Troy, N. Y. 12 Atba, Benjamin & Co., 211 Pearl, N. Y. 12 Chrome Steel Works, Brooklyn, N. Y. 12 Cleveland Crucible Steel Co., Cleveland, O. 14 Cleveland Rolling Mill Co., Cleveland, O. 14 Gautler Steel Department of Cambria Iron Co., Laborator P. 12 Laborator P. 12 Laborator P. 12 Laborator P. 14 Laborator |
| 30 | Cleveland Crucible Steel Co., Cleveland, O. 43 Cleveland Rolling Mill Co., Cleveland, O. 43 Gauther Steel Department of Cambria For Co. |
| nein- | Johnstown Pa |
| 20 | Naylor & Co., 99 John, N. Y. 42
Pennsylvania Steel Co., 268 S. 4th, Philia. 9
Philiadelphia Steel Forge, Philiadiphia 12 |
| 32 | Rowland Wm. & Harvey, Frankford, Phile. 42
Sanderson Geo. & Co., w Gold, N. Y. 42
Shoenberger & Co., Pitsburgh, Pa. 42 |
| 9 | Smith, Sutton & Co., Pittsburgh, Pa. 42
Singer, Nimick & Co., Pittsburgh, Pa. 6
Spang Steel and Iron Co., Limited, Pittsburgh, Pa. |
| Arch, | Cleveland Rolling Mill Co., Cleveland, U Gautler Steel Department of Cambria Iron Co., Johnstown Pa. Midvale Steel Co., Nicetown, Phila, Pa. 6242 Miller, Metcalf & Parkin, Pittsburgh, Pa. Aylor & Co., 90 John, N. Y. Pennsyivania Steel Co., 26 S. 4th, Phila. 6 Philadelphia Steel Forge, Philadelphia, Pa. 6 Rowland Wm. & Harvey, Frankford, Phila. 42 Sanderson Geo. & Co., to Gold. N. Y. 44 Shoenberger & Co., Pittsburgh, Pa. 4 Singer, Nimick & Co., Pittsburgh, Pa. 4 Singer, Kimick & Co., Pittsburgh, Pa. 4 Spencer John & Son, Sheffield, England. Stantard Steel Works, Philastelphia, Pa. 5 The Slemens Anderson Steel Co. 4 The Steel Co. of Scotland, 72 Pine, N. Y. 48 The Steel Co. of Scotland, 72 Pine, N. Y. 48 The Steel Co. of Scotland, 72 Pine, N. Y. |
| 13 | |
| 47 | Wardiow S. C. Sdemen. Edition (2) Steel Spiral Springs. Manyfacturers of. Cary & Moen, 23 W. 29th, N. Y. Chatillon John & Sous, qi and q; Cliff, N. Y. Stocks and Dres. Wiley & Russell Mfg. Co. Greenfield, Blass. 32 |
| Read- | Taunton Crucible Co., Taunton, Mass |
| 27 | Union Storage Co., Pittsburgh, Pa. |
| 7
3 ² | Strops, Razor. J. R. Torrey Razor Co., Worcester, Mass |
| ¥ 30 | Stove Repairs. Metzner W. C., Chicago, Ill |
| | |
| .40%45 | Dunbar, Hobart & Whidden, 39 Warren, N. Y. 13 Field A. & Sons, Taunton, Mass. |
| 43 | Phillips E. & Sons, South Hanover, Mass |
| 20 | Manning, Maxwell & Moore, III Liberty, N. Y. 43
Wiley & Russell afg. Co., Greenfield, Mass. 2 |
| 50 | Tacks. American Tack Co., Fairhaven, Mass. Cobb & Drew, Plymouth, Mass. Cobb & Drew, Plymouth, Mass. Dunbar, Hobart & Whidden, 99 Warren, N. Y. Fleid A. & Sons, Taunton, Mass. Grundy & Disosway, 166 Greenwich, V. Y. Phillips E. & Sons, South Hanover, stass. Taps and Dr. Assurable B. Co., South Hanover, stass. Wiley & Russeli #K, Co., Greekfield, Mass. Testing Machines. Olsen Tinus & Co., Philadelphia, Pa. So Rishle Bros., Philadelphia. 47 Tap Platte. |
| 49
49
50 | N. & G. Taylor Co., Philadelphia
Tin Ware, Stamped and Japannea
Shepard Sidney & Co., Buffalo, N. V. |
| 37 | Tire I partiers. Tombly E. C., Plattsburgh, N. Y. Tobacco Culters. Adams F. F. & Co., Limited, Eric, Pa. New England Butt Co., Providence, R. I |
| 488:49 | Adams F. F. & Co., Limited, Erie, Pa |
| 31 | Tool Chests American Tool Co., 16 Chambers, New York. Tools, Mechanics Standard Tool Co., 4thol, Mass. Starrett L. S., 4thol, Mass. 31 Tools, Molders', 34 Tools, Molders', 34 |
| iford, 7 | Starrett L. S., Athol, Mass. 34
Tools, Molders':
Carter H. V., 290 Pearl, N. Y. |
| Pa46
Wn, O.46 | Starrett L. S., Athol, Mass. Tools, Molders', Carter H. V., 200 Pearl, N. Y Tools, Steam and Gas Fifters, Armstrong F., Bridgeport, Ct. Asheroft Mfg. Co., II Liberty, N. Y D. Saunders' Sons, Yonkers, N. Y Tree Pruners. |
| wn, O.46 | D. Saunders' Sons, Yonkers, N. Y. Tree Fruners. Lee E. & Co., Rochester, N. Y. |
| a 43 | D. sauners sons, ronsers, N. Y. Tree Pruers, Lee E. S. & C. Rochester, N. Y. Trolling Spoeus, Trolling Spoeus, Trucks, Manufacturers of. Trucks, Manufacturers of. |
| 42 | Prucas, Manyacturers, Lockport, N. Y. 3t Pry Squares, Bevels, &cc. Makers of, Diston Heury & Sons, Phia. 44 Tube Cleaners, Steel. The Chalmers-Steele Co., foot 9th St., E. R., N. Y. 48 |
| 6
6 | Tube Cleaners, Steel. The Chaimers-Spence Co., foot 9th St., E. R., N. Y 48 Tube Expanders. Dudgeon Richard. 24 Columbia. N. Y |
| 18 | Tube Expanders. Dudgeon Richard. 22 Columbia. N. Y. Tubes. Telescope. R. T. Deakin, Philadelphia, Pa. Tubins. 6 |
| . Y18 | Tubing. 78. & Co. Philadelphia, Pa. 47 Justice P. S. & Co. Philadelphia, Pa. 39 Merchant & Co. 407 Market, Phila. 39 Twist Drille, Makers of. Morse Twist Drill & Mach. Co., N. Bedford, Mass. 44 |
| 37 | Morse Druist Drill & Mach. Co., N. Bedford, Mass. 44 Type Writers. Remington E. & Son. 281 & 282 Broadway N. V. |
| 50 | Type Wilters. Remington E. & Son, 281 & 283 Broadway, N. Y. 16 Uphoisterers' Goods. Turner & Seymour Mir. Co. 81 Rende. N. Y. Valves. Gas. Water and Steum. Curtis Regulator Co., Boston, Mass. 41 Luciow valve Mig. Co., Troy, N. Y. 44 Mohawk & Hudson Mig. Co., Waterford, N. Y. 44 |
| 47 | Curtis Regulator Co., Boston, Mass. Ludiow Valve Mrg. Co., Troy, 8 Y. Mohawg & Hudson Mrg. Co. W. Y. 45 |
| 47 | monaws & Hudson Sig. Co., waterford, N. Y 44 Vises. Boker Hermann & Co., to: Duane, N. Y 40 Cheney Anvil and Vise Co. Detroit Mich. |
| onn37 | Boker Hermann & Co., tot Duane, N. Y. 40*45
Chency Anvil and Vise Co., Detroit, Mich. 37
Howard Iron Works, Buffalo, N. Y. 44
Millers Falls Co., 72 Chambers, N. Y. 37
Frentiss Vise Co., 73 Dey, N. Y. 34 |
| 40 | Weather Strips. Dennis & Co., Chicago, Ill. Weather Vanes. E. T. Barnum's Wire and Iron Works, Detroit, Mich, 3 |
| Y30 | E. T. Barnum's Wire and Iron Works, Detroit, Mich, 3 Wheels, Halirone. Bowler & Co., Cleveland, O. Whitney A. & Sons, Philadelphia. |
| phfa. | Miles A W Wiles Continue by TT |
| 7 | White Lead. Brooklyn White Lead Co. 18; Front, N. Y |
| 3 | Jewett John & Sons, 182 Front, N. Y.
Lewis John T. & Bros., 231 S. Front Phila., Pa. 44
Window Balances.
Hugunin R. B., Hartford, Ct. |
| 43 | Hugunin R. B., Hartford, Ct |
| 50 | Window Cleaners. Perfection Window Cleaner Co., Chicago, Ill., 41 Window Springs, Makers of. Hammond W. S., Lewisberry, Pa., |
| ldale
16 | Cary & Moen, 234 W. 20th, N. Y |
| 50 | Johnstown, Pa |
| 50 | Hern-heim L., 105 John, N. Y. Howard & Morse, 45 Fulton, N. Y. |
| 41 | Mound City Barbed Jence Co. St. Louis, Mo., 48
Prentiss Geo. W. & Co., Holyoke, Mass. 2 |
| 46 | Cleveland Rolling Mili Co., Cleveland, Ohto. Gautler Steel Department of Cambris fron Co., Johnstown, Pa., Gilbert & Bennett Mfg. Co., 273 Pearl, N. Y. 7 Harrison Wire Co., St. Louis, Mo. 7 Hern-heim L., 105 John, N. Y. 8 Howard & Morse, 44 Fulton, N. Y. 9 Howard & Morse, 44 Fulton, N. Y. 9 Howard by Wire Co., 65 John, N. Y. 9 Howard by Wire Co., 65 John, N. Y. 9 Prentiles vico. W. 64 Co., Holy St. Louis, Mo., 45 Prentiles vico. W. 65 Co., Holy St. Louis, Mo., 45 Prentiles vico. W. 65 Co., Holy St. Louis, Mo., 45 Prentiles vico. W. 65 Co., Holy St. Louis, Mo., 45 Prentiles vico. W. 65 Co., Holy St. Louis, Mo., 45 Prentiles vico. W. 65 Co., Holy St. Louis, Mo., 45 Prentiles vico. W. 65 Co., Holy St. Louis, Mo., 45 Prentiles vico. W. 65 Co., Worcester, Mass. 2 Worcester Wire Co., Worcester, Mass. 2 Wire Cloth. |
| 30 | E. T. Barnum's Wire Works, Detroit, Mich ; |
| 7 | |
| 19 | Blake & Johnson, Waterbury, Conn |
| phia.13 | Gilbert & Bennett Mrg. Co. 274 Peart, N. Y. Wire Nails. Blake & Johnson, Waterbury, Conn. Blake & Johnson, Waterbury, Conn. Dunbar, Hobart & Whidden, 39 Warren, N. V. 14 Field A. & Sons, Taunton, Mass. HP. Nail Co., Cleveland, Ohlo. Wire Rope, Iron and Steel, Makers o, Broderick & Bascom, St. Louis, Mo 2 Hagard Mrg. Co., Wilkesbarre, Pa John A. Roebling's Sons Co., 117 Liberty, N. Y. 2 Lecaen A. & Son, St. Louis, Mo Wire Suretchers. |
| 31 | Hazard Mfg. Co., Wilkesbarre, Pa.
John A. Roebling's Sons Co., 117 Liberty, N. Y., 2
Lerenen A. & Son, St. Louis, Mo. |
| 31 | Wire stretcher Samaon Novelts Machine Machine Samaon Novelts Machine Machine Roger Boger B |
| 44 | Rosers J. F. & Co., 107 Liberty, N. Y |
| 36 | Wrenchen, Manufacturers of: Bemis & Call Hdw. & Tool to., Springfield, Hass 27840 Ooes A. G. & Co., Worcester Mass. 10 Coes L. & Co., Worcester, Mass. 27 Girard Wrench Mpc. Co., Girard, Fn. 3 |
| 49
49 | |
| 50 | Alexander T. J. Boston, Mass |
| | The state of the s |
| | |



LIST OF BRANDS.

Old, Reliable, Indian Pond, (Red End), Premium, Union. White Mountain, Letoilc. Diamond Grit, Fisherman (Rough), Boss Hacker (Oval), Lamoille, Willoughby Lake, Green Mountain, Black Diamond, Ragg (9 and 10 inch), Mowing Machine, Paper Mill Stone, Vermont Darby, Chocolate, Axbitts,

A. F. PIKE, Pike Station, Grafton Co., N. H., U. S. A. The World's Headquarters for Pike's Celebrated Blue Stone for Scythes and all Edge Tools.



STONE

GRINDSTONES

J. STEVENS & CO.,

Cleveland, Ohio.

The Iron-Masters'

Exclusively for the Analysis of Ores of Iron, Pig and Manufa tured Iron, Steels, Limestone, Clays, Blags and Coal for Practical

Metallurgical Purposes. No. 339 Walnut St., Philadelphia. With Branch at Warrenton, Virginia, J. BLODGET BRITTON.

This laboratory was established in 1866, at the instance of a number of practical Iron Masters, expressly to afford prompt and reliable information upon the chemical composition of the substances above mentioned, for smelting and refining purposes. The object being to make it at once a convenient, practically useful, and comparatively hexpensive adjunct to the Furnace, Forge and Rolling Mill.

CHARGES TO IRON WORKS. For determining the per cent. of Pure Iron in an ordinary Ore.

For the per cent. of Pure Iron, Sulphur and Phosphorus in do.

For each additional constituent of usual oc currence.

currence.
For those of unusual occurrence or difficult to determine, the charge must necessarily depend upon circumstances.
For determining the per cent of Sulphur or Phosphorus in Iron or Steel.
For each additional constituent of usual occurrence.

For determining the constituents of a Clay, Slag, Coke, or of an Ash in Coal the charges will corres cond with those for the constituents of an ore. For a written opinion or letter of instruction the charge must necessarily depend upon circum-

stances. Printed instructions for obtaining proper average samples for analysis furnished upon application



A. PLUEMER. Sec'y, Treas. and Gen'l Manager

Castings Malleable

known to the trade. Our specialty is

CINCINNATI.

Shovel Works,

WYOMING, LUZERNE COUNTY, PA.

Patent Plain Back Solid Shovels and Spades, Back Strap Shovels,

RAILROAD AND MINERS' SHOVELS of Superior Quality a Specialty.

DEXTER CARRIAGE SPRING **Combines**

It is Graceful, Strength, Durability,

Beauty. Light and Easy. For circulars, prices, &c., address

The DEXTER SPRING is the most perfect Carriage Spring ever invented. Wherever it is known it is rapidly superseding all others for pleasure vehicles. It is especially recommended for use on the rough roads of new countries, as its peculiar construction relieves the strain on the vehicle and shock to the passenger, while the high Noiseless, grade of material used reduces the probability of broakage to a minimum.

DEXTER SPRING CO., Hulton, near Pittsburgh, Pa., U.S. A





WELDING MALLEABLE CASTINGS.

Guaranteed to weld perfectly and capable of being drawn under a hammer. Address,

N. W. Corner Vine and Second Streets,

Wyoming

Spades and Scoops.

GEORGE N. PIERCE,

BUFFALO, N. Y.,

Manufacturer of

BIRD CAGES

REFRIGERATORS.

WHOLESALE AGENTS.

nd for Hiustrated Catalogue.
ices quoted upon application to BUTLER & DIEL.
its at Syracuse, N. Y.; OPEN STOVE VENTIING CO., % Beckman st. New York; or GEO. N.
RCE, sole manufacturer, Puffish, N. Y.

PAYNE PETTEBONE & SON.



And Case containing Handle and Set of

The Blades are made of JESSOP'S CAST STEEL, with milled Points and Shanks, making them interchangeable, and are warranted.

This Driver has four Blades from Inch to Inch in width.

ALSO MANUFACTURER OF WILLIAM A. CLARK'S

Expansive Bit.

with two Cutters, boring from 7-8 to 3 inches.

R. H. BROWN & CO.,

WM. A. and F. E. CLARK,

WESTVILLE, Conn.

AKRON IRON COMPANY.

AKRON, OHIO,

Sole Manufacturers of

Patent Hot Polished Shafting

Medal of Superiority awarded at American Institute Fair of 1880.

This Shafting is superior to any in the market, and commends itself to the trade for the following reasons, viz:

1st. It is perfectly straight and round.

2d. It can be finished accurately to any desired gauge.

3d. It will not rust or tarnish easily.

4th. It will not warp or spring in key seating.

5th. Its surface is composed of magnetic oxide of iron, and consequently presents a journal or bearing surface that is unexcelled.

6th. The peculiarity of its manufacture is such as to entail loss in making it, if other than superior stock is used. Those purchasing it may therefore be assured of receiving first-class material.

Price lists, catalogues and references furnished on application.

Where parties desire it we cut keyways or splines any length required, at a moderate AKRON IRON CO., Akron, Ohio.

E. P. BULLARD, 14 Dey Street, N. Y.

S. E. BLISS, 89 Lake Street, Chicago, Ill. D. N. BROWN MACHINERY CO., St. Louis, Mo.

J. H. KERRICK & CO., Indianapolis, Ind. JOSHUA HENDY, San Francisco, Cal.

LOCK & HARDWARE CO.,

TRENTON, N. J.

MANUFACTURERS OF DOOR LOCKS AND HARDWARE,

BRONZED IRON AND BRONZE METAL DOOR TRIMMINGS, BUTTS AND HARDWARE.

CAST BUTTS, DOOR BOLTS WELL WHEELS, FLUSH BOLTS SHUTTER BOLTS, PAD LOCKS,

BARN DOOR HANCERS, & RAIL CRINDSTONE FIXTURES, SCREW & SIDE PULLEYS, NOISELESS PULLEYS, HAY FORK PULLEYS, SHELF BRACKETS,

PHILADELPHIA SLIDING DOOR HANGERS AND RAIL.

Having largely increased our facilities and line of gooods, we invite the attention of the Illustrated Catalogues Furnished on Application

Agencies.

James M. Vance & Co., No. 211 Market St., Philadelphia. James Marshall, No. 48 Warren St., New York.

Wrought Iron Butts, Hinges DOOR BOLTS,

Plain, Japanned, Bronzed and Plated. **FACTORIES**: WAREHOUSE:

New Britain, Connecticut.

79 Chambers St., New York.

Wilson Bohannan,

BRASS PAD LOCKS

with Brass and Steel Keys

Patent Horizontal Rim Cylinder Night Latch.

Self-adjusting to doors of any thickness, with Patent Stop and Drawer Back Knob.

RIGHT OR LEFT HAND. PASSENGER CAR LOCKS, Bronzed, Nickel-Plated and Japanned

Catalogues and Samples sent on application.

BROOKLYN, N.

BROOKLYN, N. Y Bemis & Call Hardware & Tool Co.

WRENCH. These Wrenches are made from the best of Wrought Iron, with Steel Head and Jaw, case-hardened throughout, and not only combine all of the superior qualities of our Cylinder or Gas Pipe Wrenches, but also all requisite Combinations of a regular Nut Wrench thus making a combination which has no

For Circulars and Price List, address

BEMIS & CALL HARDWARE & TOOL CO., Springfield, Mass. The Farrel Foundry and Machine Co.



ANSONIA, CONN., ROCK & ORE BREAKERS,

(THE "BLAKE "STYLE), signed for breaking to small eces and one-third dust all kinds

designes for breaking to small pleeces and one-third dust all kinds of hard and brittle substances, such as Quartz, Kmery, Cold and Silver Ores, Coal, Plaster, Iron, Copper and Lead Ores; laso, Stone for making Concrete Institute Fair, 199.

Twenty years of practical test, at Home and Abroad, has proven this machine to be the best of these machines, has charge of this department of our works, and will personally superintend their extlon within a reasonable circuit. Chilled Rolls and Relling Mill Michinery, Power Presses, sing and double acting; also, Hammers, Drops and Lifters: Shafting, Pulleys and Hangers.

COPELAND & BACON, General Agents, SS Liberty St., New York.

GUN POWDER. Laflin & Rand Powder Co.

No. 29 Murray Street, New York, ORANGE LIGHTNING.

ORANGE DUCKING,

ORANGE RIFLE more popular than any Powder now in use.

Bis sting Powder and Electrical Blasting Apparatus.

Military Powder on hand and made to order. SAFETY FUSE, FRICTIONAL & PLATINUM FUSES.



A fibrous material, encasing about 90 per cent. of its volume of air, and therefore a

NON-CONDUCTOR

Being made from the slag of blast furnaces heated surfaces. Readily applied.

Heaviest grade about 25 lbs. per cubic foot. Price, I cent per lb. at works.

U.S. MINERAL WOOL CO..

16 Cortlandt St., New York.

KEYSTONE RIVETING FORGE,



An Improved Pattern. Cheap and Durable. BEST IN THE MARKET

Send for catalogue to KEYSTONE PORTABLE FORGE CO.,





THE SAFETY Combines every advantage possible in an ICE CREEPER.

Bend for Circular

R. P. SCOTT & CO., Manufrs., NEWARK, N.J. FOR SALE,

England Machinery

308 North Third St., Philadelphia, Pa Horizontal, Vertical and Locomotive Tubular Boller, from 3 to 60 H. P., in stock and larger to order. Engines all sizes. Pumps, Heaters, Injectors, steam and hand Brick and Mortar Hoists, Boller Test Pumps. The new Gravity Coffee Rosater. All of the above constantly kept in stock.



ZERO REFRIGERATOR. with Water, Wine and Milk Cooler. Best Food and Ice Preserver in the world. Send for Book. A. M. J.ESI.EY, 380 Sixth avenue. Also the Rotunda Fur



STOVE REPAIRS.

Repairs for Stoves made at Troy, Albany, Rochester, Cleveland, Buffalo, Boston, St. Louis, Quinsy, Chicago, Milwaulee and shewhere, at W. C. METZNER,
197 W. Randelph St., Skicage, Ill,

Providence Tool Co.,

PROVIDENCE, R. I.

SHIP, FLOOR AND ICE

SCRAPERS.

PRICES ON APPLICATION.



J. H. WORK, 13 Pearl St., BOSTON ACENT

S. H. & E. Y. MOORE, 163 & 165 Lake St., CHICAGO AGENT.

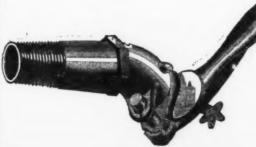
THE CENUINE STEBBINS

MOLASSES & OIL GATES.

MANUFACTURED ONLY BY

STEBBINS MFG. CO.

BRASS FOUNDERS AND FINISHERS.



Sole Manufacturers Stebbins and Brightwood

COMPRESSION AND

GROUND KEY WORK. Send for circular and price

H. M. BREWSTER, Agent, Brightwood P. O., Mass.



Hanger and Rail in the market. Will not break; cannot get off the As cheap as the

best cast iron.

Snow and Ica cannot lodge on the Rail. Write for Circulars.

CO., Dundee, N. Y. TERRY MFG.



For discounts address

CHENEY ANVIL & VISE CO., - - Detroit, Mich.

RIPLEY MANUFACTURING CO., Unionville, Conn., U. S. A.



BEST PORCELAIN-LINED LEMON SQUEEZERS "COMMON SENSE" MOUSE TRAPS. HAND-MADE ROSEWOOD FAUCETS, &c., &c.

SABIN MFG.

MONTPELIER, VT., MANUFACTURERS OF

DOUBLE-ACTING SPRING BUTTS,

SABIN'S LEVER DOOR SPRINGS, For heavy doors, BOSS AND CROWN SPRINGS, For light doors, Send for Catalogue. Represented in New York by DAVID HYMES & CO., 99 Church St.

C. F. HARRISON, BOILER, BRIDGE & TANK CUYAHOGA PALLS, OHIO.

New York Wholesale Prices, January 4, 1882.

| 11 | CVV |
|---|--|
| HARDWARE. | Butts.
Wrought B |
| Anvils. A Eagle Anvils, American. Wright's 1.0%c @ 11%c Armitage's Mouse Hole 9%c @ 9%c Trenton. Wikinson's 1.0%c Anvil Vice and Drill. | Butta. Wrought B Cast Brass, Cast Brass, Fast Joint, Fast Joint, Loose Joint Loose Joint |
| Anvil Vise and Drill. liers Falls Co. \$26.00 | Loose Joint
Loose Joint
Parliament
Mayer's Hir
Loose Pin, 1
Loose Pin, 2
Loose Pin, 2 |
| ives from list of Jan. 7, 1880. Greisweid Nobes Mg. Co. Snell Mg. Co. Warrous & Co. Extension Lip | Fast Joint,
Fast Joint,
Fast Joint,
Loose Joint
Table Butts
Inside Blind
Loose Pin, I
Loose Pin, I
Spring Hing |
| llers Falls Co., \$28.00 | Loose Pin, \(^1\) American Gem Spira Gem Spira Geer's Spr Sabin Mig. Union Spir Union Spir Union Spir Union Mig. Bommer's Bommer's Buckman' |
| Hollow Augers, French, Swift & Co. Hollow Augers, Bonney's Adjust, # doz \$48—dis zekto \$ Hollow Augers, Bearns' Adjust, # doz \$48—dis zekto \$ Hollow Augers, Isearns' Adjust, # doz \$48—dis zekto \$ Hollow Augers, Ives Expansive, each \$4, so—dis zekto \$ Hollow Augers, Universal Expan, each \$4, so—dis zekto \$ Wood's. Gimlet Bits. \$5,000 gross, 101 sept. Gimlet Bits, "Bee" dis zekto \$6 Gimlet Bits, "Bee" dis zekto \$6 Double Cut Gimlet Bits, Shepardson's. dis zekto \$ Double Cut Gimlet Bits, Cat Valley Mg. Ca dis zekto \$ Double Cut Gimlet Bits. Cat Valley Mg. Cat dis zekto \$ Double Cut Gimlet Bits. Cat Valley Mg. Cat dis zekto \$ Double Cut Gimlet Bits. Cat Valley Mg. Cat dis zekto \$ Double Cut Gimlet Bits. Cat Valley Mg. Cat dis zekto \$ Double Cut Gimlet Bits. Cat Valley Mg. Cat dis zekto \$ Double Cut Gimlet Bits. Cat Valley Mg. Cat dis zekto \$ Double Cut Gimlet Bits. Cat Valley Mg. Cat dis zekto \$ Doub | Union Spi
Union Spi
Union Spi
Union Myr
Bommer's
Blund Butta,
Blind Butta, |
| Double Cut Gimlet Bits, Burtwell's dis Sokto & Double Cut Gimlet Bits, Douglass dis 40 % Double Cut Gimlet Bits, Ives dis 50 % Grave's Bit Stock Drill dis 25 % Grave's Bit Stock Drill dis 25 % L'Hommedleu's Ship Augers dis 15 % Awl Hafts. Sewing Brass Ferrule \$3.25 \(\Prices \) gross—dis 40\(\Prices \) 62 % gross—dis 40\(\Prices \) 62 % gross—dis 40\(\Prices \) 63 % gross—dis 40\(\Prices \) 64 | Humason & |
| Pagens Peg, Paint Top. \$10.00 % gross—dis 40£10 \$ Awls, Brad Sets, &c. Awls, Brad Sets, &c. Awls, Shouldered Peg. \$\partial \text{gross} \frac{2}{3}\$ 25£10 \$ Awls, Shouldered Peg. \$\partial \text{gross} \frac{2}{3}\$ 25£10 \$ Awls, Shouldered Peg. \$\partial \text{gross} \frac{2}{3}\$ 25£10 \$ Awls, Patent Peg. \$\partial \text{gross} \frac{2}{3}\$ 25£10 \$ Awls, Shouldered Brad. \$\partial \text{gross} \frac{2}{3}\$ 25£10 \$ Awls, Handled Brad. \$\partial \text{gross} \frac{2}{3}\$ 25£10 \$ Awls, Handled Scratch. \$\partial \text{gross} \frac{2}{3}\$ 25£10 \$ Awls, Socket Scratch. \$\partial \text{gross} \text{gross} \dis \text{25}\$ 25£10 \$ Awls, Socket Scratch. \$\partial \text{gross} \text{gross} \dis \text{25}\$ 25£10 \$ Awls, Socket Scratch. \$\partial \text{gross} \text{gross} \dis \text{25}\$ 25£10 \$ Brad Sets, No. 42, \$\partial \text{50}\$; No. 43, \$\partial \text{25}\$ 25£10 \$ Brad Sets, Stanley \(^1\text{gross} \text{Excelsior}, No. 2, \partial \text{25}\$ 0. \dis 20£10 \$ Brad Sets, Stanley \(^1\text{gross} \text{Excelsior}, No. 2, \partial \text{25}\$ 0. \dis 20£10 \$ Brad Sets, Stanley \(^1\text{gross} \text{Excelsior}, No. 2, \partial \text{25}\$ 0. \dis 20£10 \$ Brad Sets, Stanley \(^1\text{gross} \text{Excelsior}, No. 2, \partial \text{25}\$ 0. \dis 20£10 \$ Axes. | Bradley's Beatty's Beatty's Can Open Messenge American Duplex Lyman's |
| Single Bit, 414 to 514 and under # dog \$10.00 net | O messenge
American
Duplex
Lyman's
No. 4, French
No. 5, Iron H
Eureka
Sardine Sciss
Star
Sprague
"Worlds E
g. \$35
Universal |
| Axes. Single Bit, 4% to 51% and under. Single Bit, 4% to 6 and over. Single Bit, 4% to 6 and over. Single Bit, beveled. Soe \$\phi\$ dos \$\phi\$ on so net Single Bit, beveled. Soe \$\phi\$ dos \$\phi\$ on so net Double Bit, 4% to 51% and under. Soe \$\phi\$ dos \$\phi\$ on net Double Bit, 4% to 6 and over. Souther Bit, 4% to 6 and over. Souther Bit, 50 \$\phi\$ dos advance Axie. Standard list. Bag Helders. Sprengle's Patent, per dos \$18. dis 40 \$ | Capa—Per
U. M. C., F. C.
U. M. C., F. C.
U. M. C., Cen.
U. M. C., Cen.
G. D. & S. B.
Double Water
Cott's Pistol,
F. L.
E. B. 1-10, grou
Musket, in 1-3 |
| Desprengie's Patent, per doz \$18. dis 40 \$ | Musket, in 1-1 Cartridge Central Fire. Cards.—Hi Cotton Wool Carpet Si Cast Steel, Po Cast Iron, Ste Bullard's |
| Gong | Casters. Bed. Plate and Sha Deep Socket. Cattle Let Humason, Bet |
| Cow, Western, Sargent's new list. dis 55&10 \$ (Cow, Kentucky "Star" dis 20&10 \$ (Cow, Kentucky, Sargent's new list. dis 55&10 \$ (Cow, Dodge's Genuine Kentucky, new list. | Chain,
Frace, 614-10-2
Frace, 614-10-3
Frace, 7-10-2
Berman Halte
Berman Coll,
Covert Halter,
Dalvanized Prack Chain, ir
Jack Chain, B
Chaik, |
| Cow, Texas "Star"dis 40 \$ | Chalk. White |
| Richard Recting and Factoring CO | White Grayon Chisels, Socket Framit Socket Firmer Anged Firmer Anged Firmer Anged Firmer Clamps, |
| Hind Fas'eners. Mackrell's. Van Sand's, Serew pattern. Van Sand's, old pattern. Van Sand's, old pattern. Var Sand's, so net Merriman's Mackrell's. Var doz pairs, \$0.65, dis to \$1 Hind Staples. Bar bed, ½ in. and larger. Bar bed, ½ in. Var Bar Bar Bar Bar Bar Bar Bar Bar Bar B | Clamps. ron, Providen ron, Adjustab ron, Adjustab ron, Adjustab ron, Adjustab ron, Capinet, ron, Carriage ron, Cord and |
| Penfield Block Co., Wrot. Iron Com. busheddis 35 %
Penfield Block Co., Lig. and Iron Sheavesdis 25 %
Penfield Block Co., Lig. and Iron Sheavesdis 25 % | orway or Bes
uperior.
Coa! Hods
riffiths' |
| Wrought Shutter, Sargent's list. dis 5,8k105 Wrought Sunk Flush, Sargent's. dis 6,8k10k105 Wrought Sunk Flush, Stanley's. dis 4,0k105 Wrought Sunk Flush, Com'n, Stanley's. dis 4,0k105 Wrought Sunk Flush, Com'n, Stanley's. dis 5,0k105 Carriage and Tire, Philadelphis, new list. dis 5,5 Carriage and Tire, Philadel | Cockeyes. Cocks, Bra sacking, new libbe, new liable, n |
| Tire, Am. Serew Co. %, Philia, new list, Nov 1, 79.dla 7 8 Tire, Bay State | Compasses alipers lividers emis & Call Cemis |
| Phillips, with Augers. 7.00 7.50 net Jennings & Co., no Augers. 5.50 6.75 dis 46 \$ Cl Heavers. Interchangeable Shelf Boxes dis 20 \$ W | Corkscrews
ough's Wire.
Corn Knive
adsworth's
Crow Bars.
ist Steel
on, Steel Poin |
| Amidous 18 | Curling Iro
96. % in., \$1.8
irling Tongs
nehing Irons
Curry Combon
tek's, new his
tehkiss, Excl.
wrence "Per |
| Reading dis 55&10 \$ Reading dis 55&10 \$ Sill Reading dis 55&10 \$ | bber. Furtain Pin vered Glass. bite Enamel. Cutlery, oriden Cutlery a. Miller Bro, umason & Bec ugatuck Cutler on Burkinsh |
| Humason, Beckley & Co.'s | ron Burkinsh |

| | ew York Who | |
|---|--|--|
| Telege T | Mayer's Hinges | 10 % 30 % 10 % 10 % 10 % 10 % 10 % 10 % |
| MMMM | Fast Joint, Lt. Narrow dis 15% Fast Joint, Broad. dis 45% Fast Joint Broad. dis 45% Fast Joint Broad. dis 55% Inside Bind, Regular dis 45% Luside Bind, Regular dis 45% Loose Pin, Wrt. dis 45% Loose Pin, Light. dis 45% | 10 % 10 % 10 % 10 % 10 % 10 % 10 % 10 % |
| NO 10 10 10 10 10 10 10 10 10 10 10 10 10 | Spring Hinges: American Spiral Spring Butt Co., Jap'd | 50250555500250000000000000000000000000 |
| - | Humason & Beckley Mrg. Co | N F |
| | \$10.00 19.00 21.50 24.00 27.00 30.00 33.50 35.50 Chan Openers Chan Openers Chan Openers Chan Openers Discourse P closs \$3.00 dis 19.00 discourse P closs \$3.00 dis 19.00 discourse P closs \$2.50 discou | REFERENCE SINCE |
| | Caps Percussion 1000. U.M. C. F. C. trimmed. 500 dis 10k10 U.M. C. F. L. ground 700 U.M. C. Den, fire ground 700 dis 10k10 U.M. C. Double W. Froof. 81.40 dis 10k2 G. D. & S. B. 30c, dis 5 Double W. Attendant 81.40 dis 10k2 dis 10k2 dis 10k2 dis 10k2 dis 10k3 d | B D B W |
| - | Universal. P doz \$3.00, dis 36 Caps—Percussion. V 1000. U.M. C., F. C. trimmed. 500 U.M. C., F. C. trimmed. 700 U.M. C. Con. fire ground 700 U.M. C. St. St. St. St. St. St. St. St. St. St | A REAL MARKETS AND A STATE OF THE STATE OF T |
| Del Ann | Carpet Stretchers. # doz \$5.00, dls 30 ast Steel, Follshed. # doz \$5.00, dls 36 ast Iron, Steel Polists. # doz \$5.00, dls 45 Bullard's. dls 35 Casters. dls 25% to Plate and Shallow Socket. dls 35% to Deep Socket. dls 35% to | AR J. J. |
| 1 | Cattle Leaders.
Tumason, Beckley & Co.'sdis 65 | S Fi |
| TOGOOGIJ P | Chain. | Ne Un |
| HEV MAN | Chalk. Paross for ne ted. Paross for ne ted. Paross for ne tue. Paross for ne tue. Paross for ne tue. Paross for ne tue. Paross for ne Chisels. Ocket Framing, Crossman dis 6,87; Ocket Framing, Arlington Edge Tool Co. dis 5,582; Ocket Framing, Ruck Bross des taxt dis 5,582; Ocket Framing, Ruck Bross distributions of taxt displayed. | Do Ge Cr |
| SSSSSSSSSSSTT | Chiaele, cocket Framing, Crossman dis 6,87, cocket Framing, Arlington Edge Tool Co. dis 5,52, cocket Framing, Buck Bros 1876 list, dis 2,56, cocket Framing, Buck Bros 1876 list, dis 2,56, cocket Framing, Witherby Tool Co. dis 6,58, cocket Framing, Witherby Tool Co. dis 6,58, cocket Framers, Crossman Edge Tool Co. dis 6,58, cocket Firmers, Arlington Edge Tool Co. dis 6,58, cocket Firmers, Huck Bros 1876 list, dis 2,56, cocket Firmers, Huck Bros 1876 list, dis 6,58, cocket Firmers, Buck Bros 1876 list, dis 6,58, cocket Firmers, Donglass dis 10,000 dis 6,58, cocket Firmers, Buck Bros dis 6,58, cocket Firmers, Buck Bro | Cla
Co.
Bu
Pa:
Ha
Pla
Pla |
| TT | anged Firmers, Spear & Jackson's | En An Bu |
| In In In | Clamps. on, Providence Tool Co.'s Wrt. Iron. dis 25 g on, Adjustable, Gray's. dis 26 g on, Adjustable, Lambert's. dis 26 g on, Adjustable, Lambert's. dis 28 g on, Adjustable, Snow's. di 4628 g on, Adjustable, Hammer's. dis 15 g on, Adjustable, Stearns'. dis 62810 g on, Cabinet, Sargent's. dis 66210 g on, Cabinet, Sargent's. dis 66210 g on, Corriage Makers', Sargent's. dis 66210 g on, Corriage Makers', Sargent's. dis 66210 g on, Corriage Makers', Sargent's. dis 66210 g Clips. Axie. | G
Ma
Wi
Wi |
| G | Cockeys dis 35% 5 Cockeys Cockes Brass. | Nai
"E
"D
Doi
Doi
Doi |
| RGPI A BOW Se Al | Cockeyes dis 35&10 8 Cocks, Brass. acking, new list. July 10, 1880. dis 49 8 lobe, new list, July 10, 1880. dis 49 8 lain Blobs, new list, July 10, 1885. dis 40 8 lain Blobs, new list, July 10, 1885. dis 40 8 Coffee Mills. ard and Box dis 45 8 filson's dis 45 8 filson's dis 45 8 merican (Enterprise Mig. Co.). 80,50, \$10.50, dis 25 8 merican (Enterprise Mig. Co.). dis 25 8 mer's wift" (Lane Bros.). dis 25 8 mer's Wift" (Lane Bros.). dis 25 8 mer's Wift" (Lane Bros.). dis 30 8 Combined Dinner; all and Lantern | Tin
Far
Far
Sar
Res |
| Pe | r doz. \$15.00 | U. 3 |
| or d | Allpers. dla 55 g widers. dla 55 g widers. dla 55 g widers. dla 55 g wins & Call Co.'s Dividers. dla 55 g wins & Call Co.'s Compasses and Callipers. dla 50 s g wins & Call Co.'s Compasses and Callipers. dla 50 g wins & Call Co.'s Double. dla 60 g wins & Call Co.'s Double. dla 60 g wins & Call Co.'s Call's Patent inside). dla 50 g wins & Call Co.'s Call's Patent inside). dla 50 g wins & Call Co.'s Call's Patent inside). dla 50 g wins & Call Co.'s Call's Patent dia 50 g wins & Call Co.'s Call's Patent inside). dla 50 g wins & Call Co.'s Call's Patent inside). dla 50 g wins & Call Co.'s Call's Patent inside). dla 50 g wins & Call Co.'s Call's Patent inside). dla 50 g wins & Call Co.'s Call's Patent inside). dla 50 g wins & Wins & Winside Co.'s Call's Patent inside winside with a winside win | Che
Har
Hur
Ver
Mag
Wai
Kip |
| aro | Crow Bars. # B 844c st Steel. # B 644c n, Steel Points # B 644c | Yer
Will
Pro
Pro
Tow |
| u in | Curling Irons. &c. dis 10 \$ 96. \$\frac{1}{6}\text{ in.} \\$ \$\frac{1}{6}\text{.80}, \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | No
Pe
Rog
Broi
Jap' |
| il. | wrence "Perfect" dis 252105 bber. #doz \$10.00 dis 15 % wrafin Plus. wered Glass net life Ename! net witer Cuttery Co. (Table) dis 25 % L Miller Bro. Sc Utlery Co. dis 25 % | Bari
Wro
Surf
Flus
Lift!
Saw |
| y | Miller Bro.'s Cutlery Co. die ac d | Boys |

| lesale Prices, | Ja |
|--|--|
| Dog Collars. Leather dissection of the collars of t | HIOX A
HOX A
HOX A
SOX SK |
| Danr Springs. P doz \$2.10, dis 1 Torrey's Rod P doz \$1.70, 1 Bee Rod P doz \$4.00 Bee Rod P d | net A |
| 2 No. 2, Medium, Japanned. \$\psi\$ dos 2.75 \ 2.80 \ 2.80 \ 3.8 maii, Japanned. \$\psi\$ dos 2.00 \ \psi \ 3.80 \ 2.80 \ 3.8 | Ba
Ba
Cl
Cl
St
Cl |
| Gem (Coll) | X Ki
U.
X Th
Te
20
X He
Ju |
| Hercules | Fit Ho An San Ge Co Co |
| Witherby Tool Co. dis 6s&to Douglass. ddis 6s&to Drill's and Drill Stocks. Blacksmiths' Self-Feeding each, \$2.50, dis 10 Blacksmiths' Self-Feeding each, \$7.50, dis 20 Breast, P. S. & W. dis 20% of Breast, Hotchkiss' dis 20 Breast, Wilson's dis 20 Breast, Wilson's each, \$2.50, dis 20 Breast, Wilson's each, \$2.50, dis 22 Breast, Bartholownew's each, \$2.50, dis 25 Breast, Merrill's dis 10 Bracket, Merrill's each, \$2.50, dis 25 Breast, Merrill's each, \$2.50, dis 20 Bracket, Merrill's e | Isa S C L Hu |
| Breast, Wilson's dis 20 Breast, Milers Fails each, \$2.50, dis 25 Breast, Bartholownew's each, \$2.50, dis 25 Breast, Bertholownew's each, \$2.50, dis 25 Breast, Merrill's dis 10 Ratchet, Merrill's dis 10 Ratchet, Weston's dis 20 Ratchet, Weston's dis 20 Ratchet, Weston's dis 20 Ratchet, Woore's Triple Action dis 20 @ 32 Whitney's Hand Drill dis 50 Wilson's Drill Stocks dis 10 Automatic Boring Tools each \$2.24, dis 20 | Hu S C L Yes S C C |
| Morse's Beach Patent. dis 30 Morse's Adjust each \$10.00, dis 30 Danhury 86.00, dis 30 | L LB |
| Fag Betters \$\phi\$ dos \$2.50, dis 2 | S SI CL |
| Mill E Buckets, light, 3½ to 10 in. (Duc's Improved) Mill E Buckets, heavy, 5 to 10 in. (Duc's Improved) Mill E. Buckets, heavy, 5 to 10 in. (Duc's Improved) W dos \$5,600 \$10.20, dis 10 Storehouse (Duc's Pat.), 12 to 27, \$12.00 \$30.00, dis 10 Emery and Emery Paper. Regular numbers. | I Gent |
| Regular numbers. \$\psi\$ \$\pm\$ \$\pm\$ \$6 \\ Flour and F. F. \$\pm\$ \$\ | Roll |
| Tinned Sauce Pans. dis 25 dis | Sere
St |
| Escutcheons. Door Lock. Brass Thread discounts as Door Locks Brass Thread dis 55 5 Wood dis 25 5 Faucets. Fenn's dis 40 5 | Scre |
| Fenn's dis 45 bohren's Pat. Rubber Bail dis 45 bohren's Pat. Rubber Bail dis 45 bohren's Pat. Rubber Bail dis 45 Fenn's Cork Stops dis 334 fenn's Cork Stops dis 334 fenn's Cork Stops dis 45 fenn's Cork Stops dis 45 fenn's Cork Baten's Key dis 45 fenn's Patent Key dis 45 fently fenn dis 50 fently Key Lisather Lined dis 50 fently f | Rive
Socia
Grui
Plan
Seov
Seov
Hick
Hick
Win
Win |
| Files. Auburn | Bird |
| Helter Bros. Horse Rasps. dis 35 S Nicholson. dis 45 S New American. dis 45 S Union File Co. dis 40 S Fluting Machines. Knox. 46-inch Rolls. \$3.50 sach | Cloth
Cloth
Ceilli
Harr
Coat
Coat |
| Union File Co | Tasse Wrote Wire Grass Whif Hook Hook Ausa Ching |
| Fig Traps. | Essezi
Putni
Natio
Vulce
Giobe
A. C.,
Ch'm |
| Forks. Hay, Manure and Spading | For
He
Burde
R. I. I
Med
Mule |
| Fry Pans. dis 60 g Burnished list as follows. dis 60 g No. o. o | Natio
Novel
White
Dunia
Wood |
| Gauges. dis 50kto 5 Marking, Stanley's. dis 55kto 5 Marking, Chapin's. dis 55kto 5 Wire. dis 10kto 5 Wire, Dission's. dis 20 5 Gillets. dis 25 5 Sail and Spike. dis 25 4 | Iron I
Ice M
Ice M
Ice A:
Kitch
Comb |
| Ginlers Ginlers Gis 45 5 8 Nail and Spike Gis 45 5 9 Eureka " Giniets Gis 5 5 Diamond " Gimiets Gis 65 5 Double Cut Shepardson's Gis 40 5 0 Double Cut Hartwell's Gis 50 5 Double Cut Lyce' Gis 50 5 Double Cut Lyce' Gis 50 5 Gis 65 5 Gis 67 5 5 Gis | Brass
Enam
Ku
Ames
Ames |
| Gline Pots, Tinned and Enameled | Ames
Morai
Hay a
Table
K n
Carris
Base |
| Gan Wads-
 Gan Wads-
 U.M. C. B. E., 11 up. \$2.00
 U.M. C. B. E., 26 to 2.20
 C.M. C. B. E., 7 & 0 3.60
 C.M. C. P. E. 11 up. 3.10
 C.M. C. P. E., 10 up. 4.00
 C.M. C. P. E., 9 & 10 4.00
 C.M. C. P. E., 5 & 0 4.00
 Malters-
 Discrete Pat. Rope dis 50 % | Hema
Door,
Door,
Door,
Furni
Furni
Pictus
Pictus |
| | Hema
Shutte
Lad
Meltin |
| Greeco Glasses Glass | Meltin
Meltin
Lar
Tubuli
Nail C
Meteor
Hurric
Peerle
Brady |
| ower's dis 25 % | Ætna.
Yanke
De Bec
Police
Conve
Law
Penns |
| Per dos \$0.50 | List. Leu Porcel Wood. Eureke Dunlaj Sammi Towns Jennin Line Cotton |

| January 4, 18 | Ö |
|---|--|
| Hickory Firmer Chisel, assorted. \$\psi\$ gross. \$\psi\$. \$\psi\$. \$\psi\$ Hickory Firmer Chisel, large, \$\ppi\$ gross. \$\psi\$. \$\psi\$ Apple Firmer Chisel, assorted. \$\ppi\$ gross. \$\psi\$. \$\psi\$ Apple Firmer Chisel, large, \$\ppi\$ gross. \$\psi\$. \$\psi\$. \$\psi\$ Apple Firmer Chisel, large, \$\ppi\$ gross. \$\psi\$. \$\psi\$. \$\psi\$ Apple Firmer Chisel, large, \$\ppi\$ gross. \$\psi\$. \$\psi\$. \$\psi\$ Apple Firmer Chisel, large, \$\ppi\$ gross. \$\psi\$. \$\psi\$. \$\psi\$ Apple Firmer Chisel, large, \$\ppi\$ gross. \$\psi\$. \$\psi\$. \$\psi\$ Apple Firmer Chisel, large, \$\ppi\$ gross. \$\psi\$. \$\psi\$. \$\psi\$ apple Firmer Chisel, large, \$\ppi\$ gross. \$\psi\$. \$\ | is
fric
a I |
| Barn Door, old patterns. | 10 %
50 %
50 %
10 %
10 %
10 % |
| Harness Suaps. | NAMAMANA
OOOOOOO |
| Hatchets. Isaia Blood | 5 |
| Shingling Nos. 1 2 3 | 5 |
| Hay Knives. "Lightning" | et |
| Hinges. Gate, Western. Gate, N. E. W doz \$6.25, dis 558.26.70 Gate, N. E. Rever-ible. W doz \$10.13, dls 558.26.70 Gate, N. E. Rever-ible. W doz \$6.50, dis 558.26.70 Gate, N. E. Sever-ible. W doz \$6.50, dis 558.26.70 Gate, N. Y. State. Gate, Sever-ible. W doz \$6.50, dis 558.26.70 Gate, N. Y. State. W doz \$6.50, dis 60.20 Gate, Seymour's. Gate, | × × × |
| Screw Hook and Eye | |
| Hoes. Riveted Shank. | MANAMANAMA |
| Bird Cage, Reading | The same of the sa |
| Sench | |
| Taisel (T. & S. Mrg. Co.) Taisel (T. & S. Mrg. Co.) | and and section of the section of th |
| Horse Nails. Nos. 5 6 7 8 9 10 dis 30 5 111111000 | EEAET |
| Medium and Heavy # keg \$4.37% | LIFFER |
| | BH HGERPP |
| Tettles. Brass, 7 to 15 inches inclusive \$\mathbb{P}\$ h 300 net rass larger than 13 inches \$\mathbb{P}\$ b 350 net nameled \$\mathbb{H}\$ b 350 net nameled \$\mathbb{H}\$ b 350 mes Brutcher Knives \$\mathred{dis}\$ 15 mes Stock Knives \$\mathred{dis}\$ 15 mes Broad Knives \$\mathred{qis}\$ dos \$1.50, \$\mathred{dis}\$ 15 mes Broad Knives \$\mathred{qis}\$ dos \$1.50, \$\mathred{dis}\$ 15 mes Broad Knives \$\mathred{qis}\$ dos \$3.50, \$\mathred{dis}\$ 15 ble and Focket \$\mathred{sec}\$ Cuttery | P DSSCOSSIJE |
| K nobs. arriage (Jap'd 80c \(\pi \) gross) | D |
| emactic Door Knobs or, Mineral oor, Por Jap'd. oor, Por Jap'd. oor, Por Jased. oor, Por Jased. sor, Por Jased. oor, Po | Pi |
| No. 0, 88.65; No. 1, \$10.15 With Guards 550 extra 10 to With Guards 550 extra 10 to Lity No. 1 \$\text{0.0}\$ dos, \$10; No. 2, \$0, net tetor No. 1, per dos, \$0.50; No. 2, \$80, net tetor No. 2 | Ha
Ja
Ja
Ja
Ha
Ha
Ha
Ha |
| nkee dis 102105 Reque dis 102105 R | Be Be Sp Be So |
| ist | R |

| | _ | |
|------------|----------------|--|
| | | I.ocks and I.atchess. Cabinet, Eagle |
| is
& 1 | | Cabinet, Gaylord some numbers Jan. 1, 1881
Cabinet, Bridgeport dis 25 % 2 % |
| 9 | Id | Cabinet, A. E. Deitz |
| 25 | × | Langstroth & Crane's List, Jan. 1. '77
 Round Key. Nos 1 to 5 |
| ne | et | Flat Key dis 33/48 to 9 A. E. Deitz, Flat Key dis 30/40 to 9 Vale Lock Co. Flat Key dis 30/40 to 9 |
| 10 | % | "Shepardson" or "U.S.". dis 35 % "Felter" or "American" dis 335 % |
| 50 | 8 | F. Many's "Extension Cylinder"\$10.50 \$\overline{0}\$ doz net book locks, &c. |
| 10 | N N | Dwarford |
| 50 | 8 | Norwels. Idea of the state of the |
| 10 | 5 | Mallory, Wheeler & Co
Trenton Lock Co |
| 00 | 200 | Padlocks - Russell & Erwin. dis 40% Mallory, Wheeler & Co. dis 40% |
| 000 | 6 | Wm. Wilcox & Co. Yale Lock Mfg. Co.'s "Standard" dis 40 % Romer's dis 30 % |
| 0 9 | 6 | Conestoga |
| 59 | 6 | "Star" |
| 50 | | MalletsHickorydis 10&10 \$ |
| 5 5 | 1 | Penfield Block Co., Lig., Apple & Hickorydls 30 %
Meat Cutters. |
| 0 % | 6 | Miles' Challenge Nos. 1 2 3 4 4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 |
| 0 | | Perry'sNos. 1 2 3 4 4g'rd 5g'rd Each\$2.00 40.00 11.00 12.00 26 on dis 20 \$ |
| 3 | 1 | Woodruffs (P. S. & W.)Nos. 100 150 1500—dis 30 \$ |
| 1 | | Draw Cut. Nos. 5 2 6 8 10 |
| , | | American |
| 1 % | 1 | Each |
| 2 | - | Highumwite Als notice Als notice |
| et | 1 | Nos |
| 55 | 1 | Mincing Knives. |
| MMA | 1 | Mincing Knives. Am. (ad quality), ₩ gross, 1 blade, 7; 2 blades, \$12; 3 blades, \$18. Det Lothrop's. dis 20&10 \$ smith's, ₩ doz, Slingle, \$2.25; Double. \$7. dis 33\6\60.5 Cowles Hdw. Co. dis 40\810.5 |
| CHEN | 1 | Cowles Hdw. Co. dis 40210 % |
| MM | 20.00 | Stebbins Genuinedis 80 % |
| MAN | 1 | Stebons finned Ends |
| 8 | i | Incoln's Pattern |
| K | 1 | Melasses Gates Melasses Gates Sebbins Pattern |
| | 1 | Vails. See Trade Report Nuts and Washers, In lots less than 100 h |
| | 6234 | add \(\frac{1}{2} \) to list\) .70 off list iquare Nuts. .70 off list texason Nuts. .70 off list Vashers. 60 off list |
| 8 | Г | 20 00 000 000 000 |
| 124.20 | THE | Nut Crackers. able (Humason & Beckley Mfg. Codis 33) lake's Pattern |
| NAMA | (| Dakum. Best P bil C |
| M. Sel Sel | 200 | S. Mavy. # 5 to C and Tin |
| t c | BMP | ra-s and Copper. alleable (Hammer's) |
| 2000 | Poo | rior's Patent or "Paragon" Brassdis 60 %
Imstead's, Tin and Zinc |
| 200 | B | roughton's Zine dis 0 5 r nughton's Brass dis 5 5 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| |] | Dackings, Steam.
N. Y. Belting and Packing Codis 20 % |
| | F | Pencils.
aber's Carpenters'high list, dis 40&10 % |
| | DOD | Pencils. aber's Carpenters'. high list, dis 40&10 % aber's Round Gilt. \$\psi\$ gross \$5.25, net kxon's Lead. \$\psi\$ gross \$4.50, net kxon's Lead. \$\psi\$ gross \$6.75, net kxon's Lumber. \$\psi\$ gross \$6.75, net kxon's Carpenters'. dis 40&10 5 Picture Nails. |
| | B | Picture Nalis. Picture Nalis. 1 dis 45&10 \$ 2 rass Head, Sargent's list. 1 dis 45&10 \$ 2 rass Head, T. & S. Mfg. Co. 1 dis 45&10 \$ 2 rass Head, Sargent's list. 1 dis 25&10 \$ 2 rass Head, Sargent's list. 1 dis 25&10 \$ 2 rass Head, T. & S. Mfg. Co. 2 dis 25 \$ 2 rass Head, T. & S. Mfg. Co. 2 dis 25 \$ 3 rass Head, T. & S. Mfg. Co. 3 rass Head, T. & S. Mfg. Co. 4 rass Head, T. & S. Mfg. Co. |
| | BPP | rass Head. T. & S. Mrg. Co |
| | Pi
N | orcelain Head, T. & S. Mig. Co |
| 1 | M | Piniting Machines. |
| | A | Piaiting Machines. ### dos \$10.00, net stor Plaiting Machine. each \$15.00, dis 20 \$ fown Plaiting Machines. dis 25 \$ 6 in., \$6.00; to in., \$6.00, each. |
| | R | Planes and Piane Irons. |
| 1 | Be | Planes and Plane Irons. nech, First Quality. nech, Second Quality. dis 20 5 nech Second |
| 1 | Ti
Be | niey's "Victor" |
| ١ | La | din Mfg. Co |
| 1 | Pl
Pl
Pl | ane Irons, Buck Bros |
| ı | PI | iron" |
| I | R | Pliers and Nippers. |
| | Ha | Pliers and Nippers. Itton's Patent. Ill's Pat. Compound Lever Cutting Nippers, No. 2, im., \$20 \(\) doz. dis 43 \(\) imasor, No. 4, 7 in., \$10 \(\) doz. dis 45 \(\) imason & Beckley Mig. Co. dis 30 \(\) to \(\) are kerkley Mig. Co. dis 30 \(\) to \(\) is Pliers. dis 50 \(\) irreka Pliers and Nippers. dis 50 \(\) izreka Plier and Nippers. dis 42 \(\) is sell's Parallel. dis 45 \(\) & & W. Cast Steel. dis 35 \(\) & & W. Tinners' Cutting Nippers. dis 15 \(\) |
| ı | Eu | is Pliers and Nippers dis 50 % ureka Pilers and Nippers dis 25 % useful Purpliel |
| ı | P.
P. | S. & W. Cast Steel dis 35 %
S. & W. Tinners' Cutting Nippers dis 15 % |
| ı | Di | Plumbs and Levels. |
| | Sta | anley R. & L. Co.'s Non-Adjustable dis 65% to 8 apin's Patent Adjustable dis 65% to 8 |
| | Sta | undard Rule Co.'s New Adjustabledis 654 to 8
undard Rule Co.'s Non-Adjustabledis 654 to 8 |
| j | Po | Plumbs and Levels. ston's |
| 1 | 881 | Post Hole and Tree Augers. maon Post Hole Digger |
| 1 | Vn
6
Eu | Post Hole and Tree Augers. \$\psi\$ dos \$37.50, dis 20 \(\) meon Post Hole Digger. \$\psi\$ dos \$36.00, dis 20 \(\) techner Post Hole ughan's Post Hole in, \$2.50; 7 \(\) and dis 20 \(\) technic Symbol Digger \(\) and dis 20 \(\) technic Symbol Digger \(\) and dis 20 \(\) and dis 20 \(\) technic Symbol Digger \(\) and \ |
| 1 | I I | ed's each \$2.50 |
| I | DIS
DIS | Ston's Combined Pruning H |
| 1.0 | CE. | ming shears 4 doz \$5 50 @ 0.00 |
| My Ju | Io | t House and Tackledia 60& 10 g |
| JJ. | al | o'd Side dis 655210 \$ 'd Clothes Line dis 655210 \$ Fork Solid Fye 2 \$ |
| N. H. A. | la
la | ### House and Tackle |
| | ** | 1 |
| BB | ellen | unchrs.
t or Drive |
| B 22 22 | pr
pr | unches. c or Drive. d doz \$2.009 2.25; \$2.50 dis 50 \$2 to r Drive. dis \$6.25! Const. Steel Drive. dis 50 \$5 \$2 to \$6.50 dis 50 \$6.50 dis 50 \$6.75 \$2 to \$6.75 |
| Bill | en | nis & Cali Co. 8 Spring and Checkdis 40 % d, Tinners' |
| 120 | lid | ail. Sliding Door, Wrought Brass # 5 43c dis 2025 5 Ing Dogr, Iron, Painted # foot 4c. dis 102 to 5 n Door Inch 5 96 36 Per 100 feet \$2.00 3.00 5.00-dis 10 \$ |
| D | T | n Door Inch 36 % % % % % % % % % % % % % % % % % % |

| January 5, 1882. | |
|---|--|
| Razor Straps. Genuine Emerson | Spoke Shaves. Defiance Metallic |
| Razor Straps. dis 60 @ 65 Genuine Emerson. dis 60 @ 65 Badger's Emerson. dis 60 @ 65 Badger's (not Emerson). dis 33½ Evans' dis 40 Imitation Emerson. 2 dos \$2.00, dis 20 Hunt's. dis 40% Chapman. dis 15 @ 20 Saunder's. dis 10 Torrey's. dis 20 | From Retained Retained From Retained Re |
| Hunt's | Stearns' Spoke Trimmers. Bonney's |
| Rivets. dis 20 9 | Bonney's ⊕ doz \$10. Stearns' ⊕ doz \$2. Ives' No. 1, \$15.00; No. 2, \$12.00 ⊕ doz Douglass' ⊕ doz ⊕ doz |
| Rivets. Iron and Tinned, new list, Dec. 10, 1881 | Basting. Riveted Table and Tead |
| Pade | Dond a Buston |
| Stair, Brass. dis 25 Stair, Black Wainut dis 40 Stair, American Patent dis 40 Rollers Barn Door, Sargent's list dis 60 Stair dis 60 | Holmes, Booth & Haydens
German Silver.
Cast Steel, Silver Plated |
| Rape. | Tin (P, S, & W.), Teas |
| ## Ape. Mnfs' Net Li t, Oct. 5, 1881, dis on 5000 in and Over Net Li t, Oct. 5, 1881, dis on 5000 in and Over Net | Stocks and Dies
"Lightning" Screw Plate |
| Manila | Hindostan No. 1, 6c; Axe, 8c. Hindostan Hacker Stone |
| Manila, Hay Rope | Sand Stone |
| Sisal, Hay Rope | Arkansas Stone No. 1. 4 to 6 in |
| Sisai, Inty Rope. Rules. Chapin's. Standard. Standard. Stapley. Stephens. dis 66%&ro \$dis 55%ro \$ | Lake Superior (Chase) # b 2
Lake Superior, Slips (Chase) # b 4
Grindstones, Family, Loring's |
| Stephens Ste | Stave Polish. Joseph Dixon's. Gem. Gem. Gold Medal. "Mirror" Fross Ruby. Fgross Ruby. Fgross Rising Sun. Fgross F |
| (Heason's Shield and Tollet dis 25 % Mrs. Pott's Irons. Doubled Pointed dis 40 % Mrs. Pott's Irons. Square Back dis 45 % Externrise Star Irons dis 65 % | Gold Medal# gross # |
| Combined Futer and Sad Iron W dos \$15.00, dis 45 % Combined Futer and Sad Iron W dos \$15.00, dis 15 % Sand Paper. | Dixon's Plumbago. |
| Sand Paper. Baeder & Adamson's Flint, oo to 1½ \$4.75 Fream Baeder & Adamson's Flint, 2, ½ & 2, 5.25 Fream Baeder & Adamson's Flint, Assorted. 475 Fream Baeder & Adamson's Flint, Assorted. 475 Fream Baeder & Adamson's Emery. Fream & 5.06 Il.50 Bartles Flint, Same list as B & A. dis 25 Bartles Harrison, \$1.75 Fream dis 25 Bartles Harrison, \$1. | Squares, Steel. dis 50 %: full cases, dis 50 Iron. dis 50 %; full cases, dis 50 Iron. dis 50 %; full cases, dis 50 Nickel Plated. add \$2,50 %4 00 % dol Try Square and T Bevels. Bisston's Try Square and T Bevels. Winterbottom's Try and Miter. |
| Barder & Adamson's Emery . W ream \$5.50 @ 11.50
Bartles Flint, same list as B & A | Disston's Try Square and T Bevels |
| Gage's dis 30%5 % Sash Cord. | Winterbottom's Try and anter [Tacks, Brads, &Cc. List of April 2, 1880. Tinned Swedes Tacks. Tinned American Tacks. Swedes Tacks, all kinds. Copper Tacks and Nails. Copper Tacks and Nails. Gimp and Lace Tacks. Gimp and Lace Tacks. Trunk and Clout Nails. Common and Patent Brads Basket Nails. Basket Nails. |
| Sash Cord. 10 56c net | Copper Tacks and Nalls. Swedes Hungarian Nalls. Gimp and Lace Tacks. |
| Raw Hide. dis 25 % Steel Ribbon. dis 10 % | Gimp and Lace Tacks, Inined. Finishing Nails |
| Sash Locks. Clark's, No. 1, \$10.00; No. 2, \$8.00 per gross. dis 23\\\ 25 \) Ferguson's dis 23\\\\ 25 \\ Clark's, No. 1, \$10.00; No. 2, \$8.00 per gross. dis 23\\\\ 25 \\ Walker's net Hammond's Window Springs no. 1, \$10.00 \(\text{P} \) gross, dis 5\\\\\ 5 \\ Northup Window Springs, No. 1, \$10.00 \(\text{P} \) gross, dis 5\\\\\ 5 \\ Northup Ferfect, Clark & Smith, Piain Jap. \(\text{P} \) gro. \$\\\\ \$4 \\\\\ 10 \\\\\\\\ 10 \\\\\\\\\\\\\\\\\ | Basket Nalls. Brush Tacks Leathered Carpet Tacks. |
| Northup Window Springs, No. 1, \$10.00 \(\tilde{\psi} \) grosdis 15\(\tilde{\psi} \) The Perfect, Clark & Smith, Plain Jap. \(\tilde{\psi} \) gro. \(\tilde{\psi} \), os net The Perfect, Clark & Smith, Por. \(\tilde{\psi} \) Jap. \(\tilde{\psi} \) gro. \(\tilde{\psi} \) at net | Basket Nalls Brush Tacks Leathered Carpet Tacks American Cut Tacks Cigar Box Nalls Chair Nails Obuble-pointed Tacks |
| The Perfect, Clark & Smith, N-Plated. P gro. \$27.00 net
"Universal". dis 20 %
Sash Weights. | Tap Borer. Common and Ring Ives' Tap Borers. Enterprise Mfg. Co. |
| Sash Weights. Solid Eyes, in \$\circ 0 B loss and over | Enterprise Mfg. Co. Tapes, Mensuring. American Spring. |
| Miles | Thermometers, |
| Saws. Disston's Circular. Disston's Mill. dis 40 5 Disston's Cross Cut. Disston's Cross Cut. Disston's Hand, Panel, Rip, &c. Boynton's Lighting Cross Cuts, new list. dis 20 5 Boynton's Lighting Cross Cuts, new list. dis 20 5 Boynton's Lighting Cross Cuts, new list. dis 20 5 Boynton's Hillet Webs, 20 inch. new list. dis 25 5 Boynton's Lighting Buck Saws X Bar. dis 25 5 Boynton's Lighting Hand, Panel and Rip. dis 20 5 W. M. & C. Mfg. Co. Cross Cuts, except Monarch.dis 20 5 Livingston's Butcher and Kitchen. dis 20 5 W. M. & C. Mfg. Co. Cross Cuts, except Monarch.dis 20 5 Livingston's Butcher and Kitchen. dis 20 6 Disston's Millet Company Compa | Tobacco (!utters.
Enterprise Mfg. Co. (Champion) |
| Disston's Cross Cut. dis 40 %
Disston's Hand, Panel, Rip, &c dis 20 %
Boynton's Lightning Cross Cuts, new list. dis 20 % | Tobacco ('utters. Enterprise Mfg. Co. (Champion). Wood Bottom. All Iron. Nashua Lock Co.'s. W doz \$8.50. Wilson's. |
| Boynton's Billet Webs, 30 inch. new list. dis 25 %
Boynton's Billet Webs, 30 inch. new list. dis 25 %
Boynton's Lightning Huck Saws X Bar. dis 25 %
Boynton's Lightning Hand, Panel and Rip. dis 25 % | Toe Calks. Winsted |
| Wheeler & Clemson Mg. Co.'s Hand | |
| Nos 101 102 103 104 105 Per doz 810.00 8.50 10.00 7.50 6.20 net | Transom Litters. Wollensak's Patent. Rieher's Patent, new list, Dec., 1881. Excelsior. di |
| W. M. & C. Mrg. Co. Cross Cuts, except Monarch.dis 20 5
Livingston's Butcher and Kitchen | |
| | Traps. Game, Newhouse Game, Oneida Pattern. Game, Riske's Patent Mouse, Wood, Choker. Mouse, Kound Wire. Mouse Cage, Wire. Mouse Cage, Wire. ### ### ### ######################## |
| Boynton's Patent X Cut, per dos, \$12.00; Hand Saw per dos, \$10.00 | Mouse Cage, Wire 2 doz 82 Mouse, Catch-em-alive 2 doz 82 Rat, "Decoy" 2 doz 810 |
| Hammer, Hotelakiss.
Hammer, Bemis & Cali Co.'s new Patentdis 30&5 5
Remis & Cali Co.'s Lever & Spring Hammerdis 30&5 5 | Trowels. Lothrops' Brick and Plastering Reed's Brick and Plastering |
| Bernis & Cali Co.'s Cross Cut dis 10 % | Lotarops is tek and reasering. Reed's Brick and Plastering Disaton's Brick and Plastering Peace's Plastering. Clement & Maynard's Brades Brick Brades Brick |
| Hart's Patent Lever. dis 20 % Disston'sdis 20 % Norrill's | Garden |
| Scales | Triers. Butter and Cheese |
| Fairbanka dia 20 g
Buffalo Scale Co. dis 20% g
Fornyth Scale Co. dia 25 g | V ises. List of July 1, '79, 6 Solid Box. List of July 1, '79, 6 Solid "Crown" (A. H. Hildick) |
| Chattillon's Grocers' dis 40 % Chattillon's Grocers' dis 40 % Chattillon's Eureica dis 25 % Family Universal dis 50 % | Solid, Peter Wright's. Solid, Wilkinson's. |
| Family Favorite. dis 30 % Family Turabull's. dis 30 % Scale Beams, Chatillon's list dis 20 % Scale Beams, Sargent's list dis 20 % Gale Beams, Sargent's list dis 60 % of 50 % Gale Beams, Sargent's list. | Parallel, Farker's. Parallel, Hilson's. Parallel, Howard's. Parallel, Merrill's. |
| Scrapers. Adjustable Hox Scraper (B. R. & L. Co.), \$0.50, dis 20\$10 g Box. 1 Handle | Solid, Peter Wright's. Solid, Wilkinson's. Parallel, Parker's. Parallel, Wilson's. Parallel, Howard's. Parallel, Howard's. Parallel, Sagent's. Parallel, Backus and Union. Parallel, Backus and Union. Parallel, Backus and Union. Parallel, Backus and Union. Parallel, Brackus and Union. Parallel, Brackus and Union. Parallel, Brackus and Union. Saw Filers, Stoarn's. Saw Filers, Bonney's. Ø dos \$14.00, do |
| Scrapers. Adjustable Box Scraper (B. R. & L. Co.), \$0.50, dis 20&10 5 Box, 1 Handle | Parallel, Prentiss
Parallel, Simpson's Adjustable
"Family," List |
| Ship, Providence Tool Co | Saw Filers, Bonney's W dos \$24.00, d
Saw Filers, Stearn's d
Saw Filers, Hopkins' W doz \$17. |
| Snip, Frovides took Congress Congress Corners Cat. Window and Door Frame. dis 33% % Screw Drivers. dis 30% % Screw Drivers. dis 30% % Douglas Mg. Co. dis 30% complete Congress Congres | Cowell Hand Vises |
| Buck Bros
Stanley Rule & Level Co.'s, Varnished Hdis., dis 50 % 10 % 10 % 10 % 10 % 10 % 10 % 10 % | Washer Cutters. ♥ dog \$12.0 Johnson's. ♥ dog \$12.0 Fenny's. ♥ dog \$14.0 Appleton's. ♥ dog \$16.0 |
| Rargent & CO | Washers.—See Nuts and Washers. Well Wheelsdis 6 |
| Dission's Patent Excessor | Wire.
Brass and Copper, list of June 10, 1880
Bright and Annealed Nos. 0 © 18, dis 9 |
| Screws.
Flat H'd Iron New list April 27, 1881 dis 30 %
Round Head Iron. New list April 27, 1881 dis 35 %
Flat Head Brass. New list April 27, 1881 dis 36 % | Bright and Annealed |
| Round Head Brass. New list April 27, 1881. dis 20 % Grass and Silver Capped dis 40 % Japanned, list of Plane Screws dis 20 % G | Jalvanized, Nos. o to 18 market list, di
Finned, Nos. o to 18 |
| Clark & Favous Serews | timed, Nos. o to 18. Jast Steel. Tinned Broom Wire, Nos. 18 to 25. Annealed Brene, Nos. 8 & 9. Annealed Grape, Nos. 10 to 14. Jalvanized Telegraph, Nos. 7 to 9. Jalvanized Telegraph, Nos. 10 to 11. Jalvanized Telegraph, Nos. 10 to 11. Jalvanized Telegraph, Nos. 10 to 11. Jalvanized Telegraph, No. |
| Machine, Round Head, Iron. dia 55 %
Bench, Iron. dia 55 % 6
Sench, Wood, Beech. % doz \$3.00, dia 10 % | islvanized Telegraph, Nos. 10 to 11
slavanized Telegraph, No
once Staples. # 16
'ence Staples, Galvanized # 1
tubs Steel Wire. |
| ienen, wood, nienery also set 10 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | tubs Steel Wire.
apanned Barb Fence.
alvanized Barb Fence. |
| Innd Rail, Am. Serew Co., list of Jan. 1, '81dis 70 % Sack (Wilson's) | uma steel Wife. apanned Barb Fence. salvanized Surb Fence. salvanized Surb Fence. with the salvanized Surb Fence. dudd's Flotture Wire. salvanized Surb Fence. Wife Cloth, green and drab. \$\psi_0 15\$ |
| R. Hugunin's | Vire Cloth, green and drab ≱ sq. ft.
Wrenches,
weerlean Adjustable |
| ogers, \$5.50 dis 52.5% B
Shears and Scissors. dis 602 108 10 8
Imerican (Cast) Iron. Pruning Hockson & Charles | axter's Adjustable "S," list Jan., 1880d
axter's Diagonald
bes' Genuined |
| Tarnard's Lamp Trimmers. \$\Psi \ \text{dos \$3.75} \ \text{Conners}\$ \text{inners} \text{dis \$15.5} \ \text{dis \$0\text{total \$15.5}} \ \text{dis \$0\text{total \$15.5\$}} \ dis \$0\tex | oes' Mechanics " |
| logers, #2 50 dis 55 li Shears and Scissors. merican (Cast) iron. "enuling to the second shears. larnard's Lamp Trimmers. "enuling to the second shears. larnard's Lamp Trimmers. "enuling to the second shears. "enul | drard Agl. diemis & Call's Patent Combination. |
| Bilding Door, M. W. & Co., list | Wrenches, merican Adjustable "S," list Jan., 1880 daxter's Adjustable "S," list Jan., 1880 daxter's Adjustable "S," list Jan., 1880 dose' (Jagonal dose') Mechanics " dispensions" dispensions "Mechanics" dispensions "Adjustable dispensions "Adjustable dispensions disp |
| liding Door, Patent Roller, Hatfield'sdis 50&10&2 \$\frac{1}{2}\$ liding Door, Russell's Anti-Frictiondis 50&10&2 \$\frac{1}{2}\$ Widing Door, Russell's Anti-Frictiondis 45 \$\frac{1}{2}\$ Widing Short for \$\frac{1}{2}\$ \$\ | he Favorite Pocket (Bright) |
| liding Shutter, Sargent's list dis 50%10%2 Stidling Shutter, Reading list dis 50%10 SU U | niversal, XX, No. 2½
niversal, XX, No. 2
niversal, XX, No. 1½ |
| case Cuttery Co. St. Trimmers dis 7,5 5 5 5 5 5 5 5 6 6 | niversal, XX, No. 8 |
| ayne Pettebone & Son, new listdis 40&10 \$\ \text{lis 15 \$\ \text{Pe} \) ayne Pettebone & Son, R. R. Shovelsdis 15 \$\ \text{Pe} \) emington's (Lowman's Patent)dis 20 \$\ \text{Pe} \) | niversal, XX, No, 22 |
| owland's and Tengs. Shovels and Tengs. Per Con and Brass Head, R. & E. list dis 60&10&2 \$ Per Collished Steel, new list. dis 50&10&2 \$ Users. | erless, No. 239, with Cogs.
eerless, No. 3, with Cogs.
eerless, No. 4, with Cogs. |
| Olished Steel, new list. dis 50&10\$2\$ UT Slates. Unquere Frames, by case. dis 70\$ N Less than a case. dis 65&10\$ Ex | Wringers, Inversal, XX, No. 2½ Inversal, XX, No. 2½ Inversal, XX, No. 1½ Inversal, XX, No. 1½ Inversal, XX, No. 1½ Inversal, XX, No. 13 Inversal, XX, No. 14 Inversal, XX, No. 15 |
| Less than a casedis ogazio 🛠 [Ex | www.daway.orv.e.dk.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |

| | | ר |
|---|---|--|
| | Spoke Shaves. | 10 8 |
| | Defiance Metallic dis 20&: Lron. dis 4 Wood dis 30&: Bailey's (Stanley R. & L. Co.), new list dis 30&: Stearns' dis 30&: Spoke Trimmers. | 50000 |
| | Bonney's. | ******** |
| | Specials | ****** *1 |
| | Holmes, Booth & Hayuens | 5%
5%
1et
1et |
| - | "Lightning" Screw Plate. dis 1 810ne. Hindostan No. 1, 60; Axe, 80. dis 20&1 Hindostan Hacker Stone. \$2008 \$12.00 dis 1 | N N NO |
| | Washita Stone | et
let
let
let
m |
| | Stove Pollab. # gross \$6.00, dis no general process of the pro | % % % et |
| | Squares. Steel. dis 50 %; full cases, dis 50&10 % } Iron dis 50 %; full cases, dis 50&10 % } 2 / Iron dis 50 %; full cases, dis 50&10 % } Nickel Plated. add 82,50 % \$4 00 % doz, net } Cal Try Square and T Bevels dis 50&10 dis 50&10 % dis 5 | sh × |
| | Tacks, Brads, &Cs. List of April 2, 1880. Tinned Swedes Tacks. dis 50 % Tinned American Tacks. Swedes Tacks, all kinds. dis 40 % Copper Tacks and Nails. dis 33/5 % | Es |
| | Winterbottom's Try and Miter. dis 2021c Tacks, Bradks, &c. List of April 2, 185. dis 50 \$ Tinned American Tacks dis 60 \$ Tinned American Tacks dis 60 \$ Swedes Tacks, all kinds dis 40 \$ Copper Tacks and Nails dis 335 \$ Gimp and Lace Tacks. dis 60 \$ Gimp and Lace Tacks, Tinned dis 50 \$ Finishing Nails dis 305 \$ Finishing Nails dis 30 \$ Common and Patent Brads dis 50 \$ Finishing Nails dis 50 \$ Common and Patent Brads dis 50 \$ Common and Patent Brads dis 50 \$ Common and Patent Grads dis 50 \$ Common | Extra 10 % on all. |
| | Common and Ring dis 20 Ives' Tap Borers dis 15&20 Enterprise M&C Co dis 30 | MAN M |
| | Tapes, Mensuring- American. Spring. dis 20 Spring. dis 24&10 Thermometers. Tin Case. dis 70&10 Tobacco Cutters. | × |
| | Tobacco ('utters. Enterprise Mfg. Co. (Champion) | |
| | Tinners' Tools and Machines. Machines (P. S. & W.). list add 20 Tools (P. S. & W.). add 6 | 1 |
| | Transom Litters dis 35 Wollensak's Patent dis 35 Richer's Patent new list Dec. 1881 dis 30810 Excelsior dis 50810 Trans dis 40 Game Sawhouse dis 40 Game Clarke's Patent | - 1 - |
| | Traps. Game, Newhouse Game, Onelda Pattern. Game, Blacke' Pattert Goue, Blacke' Pattert Gouse, Wood, Choker Gouse, Wood, Choker Gouse, Wood, Choker Gouse, Gound Wire Gouse, Gound Wire Gouse, Gound Wire Gouse, Gound Wire Gouse, Goutchemalive Gouse, Gotchemalive Gotchemalive Gouse, Gotchemalive Gotchem | . 13 |
| 1114111 | Reed's Brick and Plastering dis 15 | # 02 02 02 02 02 |
| | Trucks (Warehouse, &c.) | |
| 00 00 00 | Vises. Solid "Crown" (A. H. Hilldick) | 0 |
| | | 1 |
| PP · SERVICE | araliel, Frontiss adjustable dis 25 araliel, Simpson's Adjustable dis 25 araliel, Simpson's Adjustable dis 25 Family'. List net aw Filers, Bonney's © dos \$2400, dis 202 to 5 aw Filers, Stearn's dis 202 to 5 aw Filers, Hopkins' © doz \$17, 90, dis 10 g eading dis 25 araliel states of the control of the cont | |
| 3 | owell Hand Visesdls 20 %
ichardson's Vise and Anvildls 25 % | |
| 1 | VY Smith's Patent \$\psi\$ dos \$\psi 20.0 dls as \$\epsilon \text{20.0 fls os \$\psi \text{20.0 | |
| h | Well Wheels dis 60&100%10 % Wire. dis 200%5 % rass and Copper, list of June 10, 1880 dis 200%5 % right and Annealed Nos. 0 @ 18, dis 50 % 52½ % right and Annealed Nos. 10 @ 26, dis 50 % 618 50 % right and Annealed Nos. 27 @ 36 dis 50 % 618 50 % | F |
| 101111 | right and Annealed. Nos. 19 @ 28, dis 50 % right and Annealed. Nos. 27 @ 36, dis 50 % pppered. Nos. 27 @ 36, dis 55 % pppered. Nos. 0 @ 18 dis 45 @ 47 % 4 % arvanised. Nos. 0 to 18. market list, dis 49 64 47 % anned, Nos. 0 to 18. dis 49 64 47 % dis 49 64 47 % dis 50 % dis | - |
| 8 8 8 8 | nned, Nos. 0 to 18. dis 40 Ga 45 % at 5 teel. dis 50 Ga 45 % ant 5 teel. dis 50 finned Broom Wire, Nos. 18 to 25. dis 50 finned Broom Wire, Nos. 18 to 25. dis 50 finned Grape, Nos. 0 to 14. dis 50 Ga 55 finned Grape, Nos. 10 to 14. dis 50 Ga 55 finned | |
| u | rner & Seymour Mfg Co., Picture Wire dis 85222 % dd's Picture Wire dis 85220 & othes Line Wire, Galvanized © coil 25 @ 400 net ire Cloth, green and drab & sq. ft. 25c net | |
| a a o o | Wrenches, dis 45 % merican Adjustable dis 100 % sker's Adjustable dis 200 % sker's Blagonal dis 200 % es' Genuine dis 400 % es' Mechanics dis 400 % es' Mechanics dis 400 % es' Pattern, Maleable dis 75 % | The same of the sa |
| in the second like | | The state of the s |
| Vana all | Vringers. Per doz. tversal, XX, No. 2½. \$60.00 tversal, XX, No. 2 56.00 tversal, XX, No. 2 50.00 tversal, XX, No. 1½. 71.00 tversal, XX, No. 1 33.00 tversal, XX, No. 8 entch 12.00 tversal, XX, No. 12 entch 20.00 | |
| 110000000000000000000000000000000000000 | | TH |
| á | 1 m | |

| 1 - 60 | Ī |
|---|---|
| ke Shaves. | 1 |
| ice Metallicdis 20&10 % | 1 |
| dis 20tto \$ | 1 |
| | 1 |
| is | 1 |
| ke Trimmers. | 1 |
| y's @ doz \$10.00, diq 40&5 % | 1 |
| is' | 1 |
| 18' | 1 |
| Ous. | ı |
| ous.
gdis 60&10&10 | 1 |
| d Table and Ton | 1 |
| Table and Teadis 55 2 | П |
| nis | 1 |
| Bartondis 40&5&5 | 1 |
| Elton. dis 40% 5% 5 %
s. Booth & Haydens. dis 40% 5% 5 % | ı |
| n Silver | I |
| and Silver Plated discole & | ı |
| S. & W., Teas | ſ |
| S. & W.), Thores | î |
| wieg Hdw Co.), case lots | ł |
| ke and Diesdis 5&10 % | 1 |
| ks and Dies | Ł |
| 10 | Ł |
| tan No. 1, 6c; Axe, 8cdis 20&10 % | ı |
| tan Hacker Stone | Ł |
| tone # 15 6e, dis 331/6&10 % | ı |
| ta Stone | ı |
| La Stone | ı |
| as Stone No. 1. 4 to 6 in B \$1.35 net | 1 |
| | ı |
| Oil Stone (Chase) | ı |
| amondon (Chago) it is not die tobe C | ı |
| uperior, Silps (Chase) | Ŀ |
| | ı |
| e Polish.
Dixon's e gross \$6.00, dis 10 % | 1 |
| Dixon's @ gross \$0.00, dis 10% | 1 |
| ₩ gross \$4.50, dis 10 % | |
| edal Fgross \$6.00, dis 25 % | 4 |

| | Ruby \$\Pi\ \gamma\ | iet | |
|---|---|--------------------|---|
| | Squares, dis 50 %: full cases, dis 50&10 % } lrondis 50 %: full cases, dis 50&10 % } lrondis 50 %: full cases, dis 50&10 % } located and full cases. dis 50&10 % } car Try Square and T Bevelsdis 50&10 Disston's Try Square and T Bevelsdis 40 % unterbottom's Try Try and Mitterdis 50&10 % in the full casesdis 50 % in th | sh XXX | |
| | Trunk and Clout Nails | Extra 10 % on all. | |
| 4 | Tap Borer. dis 20 Common and Ring. dis 15 & 10 Ives' Tap Borers. dis 15 & 10 Enterprise Mig. Co. dis 30 | 96.76 | - |
| | Tapes, Measuring. American | 2434 | 1 |
| l | Thermometers, Tin Case | × | 1 |
| | | | |

| | Tobacco ('utiers, Enterprise Mfg. Co. (Champion). dis 25 % Wood Bottom M doz \$12.00, dis 405 % Ali Iron M doz \$12.00, dis 405 % Asil Iron M doz \$13.00, dis 405 % Nashua Lock Co.'s M doz \$15.00, dis 405 % Wilson's dis 45.00 % M doz \$15.00 % dis 45.00 % M doz \$15.00 % dis 45.00 % d |
|---|--|
| ı | Toe Calks. Winsted₩ 5 9c, dis 5 % |
| | Tinners' Tools and Machines. Machines (P. S. & W.). |
| | Transom Litters. dis 35 % Richer's Patent, new list, Dec., 1881. dis 30%10 % Excelsior. dis 50%10%2 % |
| | Trn ps. Game, Newhouse dis 40 5 Game, Onedia Pattern dis 55 5 Game, Riake's Patent dis 40 5 Mouse, Wood, Choker \$\partial arc \text{ host holes, 10/3c}\$ |

| ı | Trowels. | |
|----|---|---|
| ı | Lothrops' Brick and Plastering | |
| l | Reed's Brick and Plastering | 0 |
| ſ | Disston's Brick and Plastering | |
| I | Peace's Plastering | |
| r | Clement & Maynard's | 6 |
| ı | Rose's Brick | |
| ľ | Brades' Brick
Worrall's Brick and Plastering | , |
| ŀ | Worran's Brick and Flastering | d |
| ı | Gardendi | u |
| ŀ | Triers. | |
| Ì. | Butter and Cheese | |
| | Trucks (Warehouse, &c.) Penfield Block Co | |
| ı | Trises. | |

| Solid, Wilkinson's | 1336 |
|--|----------|
| Parallel, Parker's | is to |
| Parallel, Wilson'sdis 3 | 58210 |
| Parallel, Howard'sdls 2 | OUTTO! |
| Parallel, Merrill'sd | IB IS |
| Parallel Surgent'sdis 5 | 58010 5 |
| Parallel, Backus and Uniond | 18 40 1 |
| Parallel, Oval Slided | \$8 40 S |
| Parallel, Double Screw Legdls 1 | 56 IO 9 |
| Parallel, Prentissd | IS 25 5 |
| Parallel, Prentiss | 8 25 5 |
| "Family," List.
Saw Filers, Bonney's | net |
| Saw Filers, Bonney's U dos \$24.00, dis 20 | A 10 5 |
| Saw Filers, Stearn'sdis 20 | 00 300 |
| Saw Filers, Hopkins' V doz \$17.50, di | 18 10 9 |

| Saw Filers, Hopkins'. © doz \$17.50, dis 10 Reading. Cowell Hand Vises Richardson's Vise and Anvil dis 25 | g
g |
|--|--------|
| Washer Cutters. \$\P\$ doz \$\pi \text{2.00}\$, dis \$5\$ Johnson's. \$\P\$ doz \$\pi \text{2.00}\$, dis \$5\$ Penny's. \$\P\$ doz \$\pi \text{4.00}\$ and \$\pi \text{6.00}\$, dis \$5\$ Appleton's. \$\P\$ doz \$\pi \text{6.00}\$, dis 60\$ Washers. \$\P\$ doz \$\pi \text{6.00}\$, dis 60\$ | ŝ |
| Wall Wheels . Ale Colombia | |

| Well Wheelsdis 60&10&10 \$ |
|---|
| Wire. |
| Brass and Copper, list of June 10, 1880dis 20&5 % |
| Bright and Annealed Nos. o @ 18, dis 50 @ 521/6 % |
| Bright and AnnealedNos. 19 @ 26, dis to % |
| Bright and Annealed |
| CopperedNos. o @ 18 dis 45 @ 4734 % |
| Balvanized, Nos. o to 18 market list, dis 40 @ 45 % |
| Finned, Nos. o to 18 dis 40 68 45 % |
| Cast Steel dis 40 6 |
| Finned Broom Wire, Nos. 18 to 25dis 55 % |
| Annealed Fence, Nos. 8 & 9dis 55 @ 52 6 5 |
| Annealed Grape, Nos. 10 to 14dis 50 @ 5212 \$ |
| Jalvanized Telegraph, Nos. 7 to 9 # B 9 C |
| Balvanized Telegraph, Nos. 10 to 11 B to C |
| Jalvanised Telegraph, No 8 ib 1056c |
| Pence Staples # 10 514 @ 5140 |

| | Galvantzed Telegraph, Nos. 7 to 9 # B 9 |
|---|--|
| | Galvanized Telegraph, Nos. to to 11 B 10 |
| j | Galvanised Telegraph, No 1 10 105 |
| ı | Fence Staples |
| | Fence Staples, Galvanised B b 7 @ 71 |
| ı | Stubs Steel Wire |
| į | Japanned Barb Fence 8 to 834 |
| l | Galvanized Barb Fence W h of |
| ı | Steel Music Wire, Nos. 12 to 27 @ 3 \$1.25, no |
| ı | Turner & Seymour Mfg Co., Picture Wiredis 80020 |
| J | Judd's Picture Wiredis 80.320 |
| ı | Clothes Line Wire, Galvanized F coil 25 @ 400 ne |
| ١ | Ciotaes Line wire, Garvanized 4 con 25 30 400 ne |
| Ì | Wire Cloth, green and drab g sq. ft., 24c ne |
| J | Wrenches. |
| 1 | American Adirectable |
| l | American Adjustable |
| 1 | Baxter's Adjustable "S, list Jan., 1000dis 10%5 |
| | Baxter's Diagonaldis 20%5 |
| | Coes' Genuinedis 40&10 |
| | Coes' "Mechanics "dis 40&10&10 |
| | Coes' Pattern, Malleabledis 75 |
| | Coes' Pattern Wrought dis to |

| Baxter's Adjustable "S," list Jan., 1880 | CHIS TOXA |
|--|------------|
| Baxter's Diagonal | dis zo&s |
| Coes' Genuine | 118 408 10 |
| Coes' "Mechanics "dis | 0120130 |
| Coes' Pattern, Malleable | dis 75 |
| Coes' Pattern Wrought | dis oo |
| Girard Standarddls | 500010005 |
| Girard Agl | 18 65 % to |
| Bernis & Call's Patent Combination | dis so |
| Bemis & Call's Merrick 'sPattern | dis 35 |
| Bemis & Call's Brigg's Pattern | dis 25 |
| Bemis & Call's Cylinder or Gas Pipe | dis 40 |
| Van Wagoner & Williams' Basin | doz 84. |
| Aiken Pocket (Bright) | 18 60810 |
| The Favorite Pocket (Bright) P dog 8 | 8, dis 60 |
| Webster's Patent Combination | dis 75 |
| Walness | Per do |
| Wringers. | Per do |
| Universal, XX, No. 216 | \$50,00 |
| Universal, XX, No. 2 | 03.00 |
| Universal. XX, No. 11/6 | 71.00 |
| Universal, XX, No. 1 | 93.00 |
| Universal, XX, No. 8each | 12.00 |
| Universal XX No 12 each | 20 00 1 |

| | Bemis & Call's Brigg's Pattern Bemis & Call's Cylinder or Gas Pipe Van Wagoner & Williams' Basin. Alken Pocket (Bright) | doz & | 450 % |
|--|---|----------------|---------------|
| The same of the sa | Wringers, Universal, XX, No, 2½, Universal, XX, No, 1½, Universal, XX, No, 1½, Universal, XX, No, 1½, Universal, XX, No, 12, Universal, XX, No, 12, Universal, XX, No, 18, Universal, XX, No, 18, Universal, XX, No, 22, each Peerless, No, 1, no Cogs, Peerless, No, 1, no Cogs, Peerless, No, 2½, with Cogs Peerless, No, 2½, with Cogs Peerless, No, 2, with Cogs Unique, No, 0, 0 Unique, No, 0 | 71.00
93.00 | dis 25 @ 30 % |

REMINGTON

RIFLES, SHOT GUNS, PISTOLS, &c. U Ask for Prices.

Alford, Ward Davenport & Co., 85 Chambers St., New York.



STATEMENT SHOWING THE NUMBER OF

HILL'S TRIANGULAR HOG RINGS

Sold to the Jobbing Trade in the Cities and States named, from Dec. 1, 1880, to

| | | Dec. | 1, 1881. | |
|----|----------------------------|-------------|--|---------------------------|
| | San Francisco | 170,400 | Omaha | 54,00 |
| | California | 170,400 | Nebraska . | 54,00 |
| | Alton | 7,200 | | 14,40 |
| | Bloomington | 32,400 | | 14,40 |
| 1 | Danville | 18,000 | | |
| 1 | Decatur | 410,400 | | 14,40 |
| 1 | Jacksonville | 31,200 | Elmira | T.4.40 |
| 1 | Pekin | 45,600 | New York City | 52,90 |
| 1 | Paris | 14,400 | Poughkeensie | 28,80 |
| 1 | Peoria | 513,600 | Syracuse | 43,60 |
| 1 | Quincy | 108,000 | Rochester | 31,20 |
| 1 | Rock Island | 105,600 | Utica | 5,00 |
| 1 | Springfield | 89,400 | | - |
| 1 | Illinois : | 250,200 | New York. | |
| ı | Illinois5 | | Cincinnati | 961,00 |
| 1 | Franklin | 14,400 | Cleveland | 301,20 |
| ı | Ft. Wayne | 43,200 | Columbus | 196,80 |
| ı | Indianapolis | 645,600 | Dayton | |
| Ī | La Fayette | 195,600 | Delaware | 14,40 |
| 1 | Terre Haute | 32,400 | Gallipolis | 9,60 |
| 1 | ICITO MAGNETO | 201400 | Hillsboro | 16,80 |
| 1 | Indiana | 045,600 | Sandusky | 7,20 |
| 1 | | | Springfield | 2,40 |
| 1 | Burlington
Cedar Rapids | 158,400 | WashingtonC.H. | 72,00 |
| ı | Davenport | 223,200 | Zanesville | 63.60 |
| ı | Des Moines | 187,200 | amenco rialo | 03.00 |
| ı | Dubuque | 72,000 | Ohio | 1.871.200 |
| 1 | Ft. Dodge | 28,800 | The second secon | the state of the state of |
| ı | Keokuk | 50,400 | Portland | 36,000 |
| Ī | McGregor | 7,200 | Oregon | -6 |
| ł | Ottumwa | 28,800 | Oregon | 36,000 |
| 1 | - | | Allegheny City. | 14,400 |
| ŧ | Iowa | 770,400 | Philadelphia | 343,200 |
| ı | Atchison | 122,400 | Pittsburgh | 21,600 |
| ı | Leavenworth | 18,000 | Reading | 19,200 |
| ı | | | - | |
| ı | Kansas | 140,400 | Penna | 398,400 |
| | Louisville | 190,800 | Knoxville | 62,400 |
| ı | Maysville | 33,600 | Nashville | 4,800 |
| ı | Kentucky | 001 100 | | |
| į. | | 224,400 | Tennessee | 67,200 |
| Г | Baltimore | 396,000 | Lynchburg | 14,400 |
| Г | Maurland | 6 | Richmond | 13,200 |
| ١. | | 395,000 | | -31 |
| 1 | Detroit | 189,600 | Virginia | 27,600 |
| | Michigan : | 189,600 | Wheeling | 234,000 |
| 1 | St. Paul | I andromine | · · · · · · · · · · · · · · · · · · · | 234,000 |
| 1 | Winona | 9,600 | W. Virginia. | 234,000 |
| | - | | Fond du Lac | 6,000 |
| | Minnesota | 27,600 | La Crosse | 14,400 |
| 1 | Kansas City | 201,600 | Milwaukee | 385,200 |
| 1 | | 273,600 | | 2-21-00 |
| В | St. Louis | | Wisconsin. | 405,€00 |
| 1 | Sedalia | 28,800 | | |
| | Invincehold | We some | | - |

Sedana 28,500
Springfield 14,400

Missouri 1,743,200

Total 13,362,100 100,000,000 of HILL'S Tri-Rings have been sold in mine years, consuming 550,000 pounds of wire, measuring 3400 miles. For sale by Hardware Dealers

. W. HILL & CO., Decatur, Ill.

AGENTS IN ALL FOREIGN COUNTRIES.



119 South Fourth Street, Branch Office, 605 Seventh St. Washington, D. C.
H. HOWSON, Engineer and Solicitor of Patents.

C. HOWSON, Attorney at Law and Counsel in Patent Casts.



THE CIANT PAD LOCK.

HE SMITH & EGGE MFG. CO.

Superior in Every Respect.

is is one of the best selling Locks in the market, affords the dealer a large profit. It is thoroughly strongly made—of the best material—very hands in appearance, and every Lock is warranted. ders solicited. Address as above Lock Box 1705. Bridgeport, Conn.

163 & 165 LAKE ST., CHICAGO,

AGENTS FOR PROVIDENCE TOOL CO.,

Wm. H. Haskell & Co.,
WATERS'
Improved

Wm. H. Haskell & Co.,
Black Diamond File Works,
Saranac Horse Nail Company.

GIMLET POINT COACH SCREWS, THRESHING MACHINE TEETH.

Wood Screws, Files, Horse Nails, Taps, Rope and Iron Strapped Blocks, Iron Tackle Blocks, Turn Buckles, Ship Chandlery, Hardware, &c.

Also Manufacturers of Climax Barn Door Hangers. Baggage Car Door Hangers, Sliding Door Sheaves,

Moore's Differential Pulley Block,

MOORE'S

Hand Hoists

WITH LOCK BRAKE,

For Stores, Factories, Mills, Builders, Contractors, &c.

These Hoists are specially constructed to raise beary weights with ease and rapidity. They can be suspended from any beam or bar, and fitted to lift any hight.

They are Simple, Durable and Powerful.

The Lock Brake will hold the load suspended in

my position.

The 655-pound size is now ready; with it one man an easily lift 650 pounds.

Send for Price List.

S. H. & E. Y. MOORE,

163 & 165 Lake St., Chicago.

Smith's Patent Mincing Knives. These Knives are made

of the best Steel and in a most thorough man-



ner. The blades are held at full tension by the screw, which passes through the handle, drawing the upper end of the side pieces to-gether over the wire prace, in the same man-ner as a wood saw is strained up for use. For sale by the Wholesale Hardware Trade in all the Leading Cities of the United States.

No. 1. Single Blade. C. E. JENNINGS & CO., Sole Proprietors, 96 Chambers St., NEW YORK.

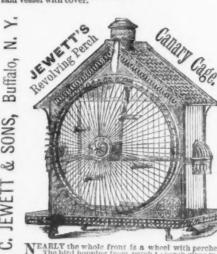
PORTABLE

COMBINES,

nized iron) containing the filtering medium or eceive said vessel with cover.



SONS, JEWETT ت



46 South Street, New York

JOHN JOHN C. JEWETT & SONS, Buffalo, N. Y.



Elizabethport Steam Cordage Co., MANUFACTURERS OF MANILA, SISAL AND TAR

Represented in New York by LAMSON & GOODNOW MFG. CO.

CORDAGE OF ALL KINDS. BINDER TWINE A SPECIALTY.

METALS.

IRON.—DUTT. Bars, 1 to 14cc. \$\psi\$; Sheet, Band Hoop and Scroll, 14(10.14cc. \$\psi\$); provided, that none of the above iron shall pay a less rate of duty than 3c per cent. Pig. \$7 \pi\$ ton; Polished Sheet, 3c. \$\pi\$ ton. Cast Scrap, \$\pi\$ \pi\$ ton. Railroad, 70c. \$\pi\$ 100 B. Boller and Plate, 13cc. \$\pi\$ B.

NEW YORK WHOLESALE PRICES, January 4, 1882.

| Foundry, No. 2x. # ton 24.50 @ 25.
Gray Forge. # ton @ 24.
Beotch Iron. | 00 15 Per cent |
|--|--|
| Eglinton # ton 24.50 @ 25. Carnbroe (to arrive) # ton Cottness # ton 26.50 @ 27. Glengarnock # ton 6 25. Gartherie (to airlive) # ton @ 25. | 18 Per cent. 20 Per cent. 21 Per cent. 21 Per cent. 22 Per cent. 23 Per cent. 24 Per cent. 24 Per cent. 25 Per cent. 26 Per cent. 26 Per cent. 27 Per cent. 28 Per cent. 29 Per cent. 29 Per cent. 29 Per cent. 20 Per cent. 21 Per cent. 22 Per cent. 23 Per cent. 24 Per cent. 25 Per cent. 26 Per cent. 26 Per cent. 27 Per cent. 28 Per cent. 29 Per cent. 29 Per cent. 20 Per cent. 21 Per cent. 22 Per cent. 23 Per cent. 24 Per cent. 25 Per cent. 26 Per cent. 27 Per cent. 28 Per cent. 29 Per cent. 20 |
| | Railway Bars, 1/4c \$\Pi\$ b. Railway Bars, in part Stee ic \$\Pi\$ b. Provided, that Metal comented, castor mad from Iron by the Resember or pneumatic process. |
| Iron, a (mill. | whatever form or description, shall be classed as American Cast Steel. For American Steel see quotations under heading of |
| Scrap. | Pittsburgh. English Steel. Best Cast. |
| Wrought Scrap \$\psi\$ ton, from yard \$ @ 32.5 Bar Iron from Store. Common Iron: | Extra Cast. |
| 1 to f in. round and square | English Steel Best Cast. |
| % to 2 in. round and square } b b @ 2.9 1 to 6 in. x \ 4 and 5 io \ b b @ 3.1 | c ad quality. P D 10c ad quality. P D 10c Sheet Cast Steel, 1st quality. P D 1ct |
| Rods—\$6 and 11-16 found and square. \$7 \$5 \$6 \$.0 Bands—1 to 6 \$2-16 to No. 12 | ad quality. # B 1416 |
| Sheet Iron. | LEAD.—DUTY: Pig, \$2 \$ 100 b; Old Lead, 1340 \$ b
Pipe and Sheet, 236 \$ b. |
| American. American. P B 4 C 5 C 5 C 5 C 6 C 6 C 7 C 7 C 7 C 7 C 7 C 7 C 7 C 7 | Bar 70, ne Pipe 74c, dis 10 |
| 25 to 26. If the 4% C 5/4C 27. If the 5/4C 5/4C 28. If the 5/4C 5/4C 28. If the 5/4C 5/4C 5/4C | Sheet |
| Galvanized, 10 to 20 | N. P. U. BABBITT METAL. W B @ 90 |
| American | N. P. U |
| Russia. P B 11 C G 11/60 | per cent. Banca |
| COPPER.—DUTY: Pig, Bar and Ingot, se; Old Copper 4c ₹ B; Manufactured (including all articles of which Copper is a component of chief value), 45 % ad valorem. | English |
| American Ingot | I C 10X14 Prime Charcoal |
| Glazier.' Copper, ordinary sizes, 16 oz. per sq. ft., and over # 5 | I C 14X20; 1 C 12X12, Prime Charcoal 6,75 ⊕ 7,00 I X 10X14; Prime Charcoal 8.25 ⊕ 8,50 I X 14X20; I X 12X12, Prime Charcoal ⊕ 8,75 I X 12X12, Prime Charcoal ⊕ 6.25 D V 125€x17, Prime Charcoal ⊕ 6.25 For each additional X add 2.80 |
| and over 12 or., \(\psi\) sq. ft. \(\psi\) and over 12 or., \(\psi\) sq. ft. \(\psi\) \$\(\psi\) 300 Glaziers' Copper, 10 st. and 12 or., \(\psi\) sq. ft. \(\psi\) \$\(\psi\) 300 Glaziers' Copper, Lighter than 10 or. \(\psi\) sq. ft. \(\psi\) \$\(\psi\) 300 | D X 12/4x17, Prime Charcoal |
| Circles less than 84 in. in diameter. # 5 330 Circles 84 in. diameter and over. # 5 300 Segment and Pattern Sheets. # 5 330 | IC 10X14 Best. Ordinary. |
| Sheathing Copper, over 12 of. # sq. ft. # 5 26c Bolt Copper . # 5 30c | 1 C 12x12 |
| SHEATHING BRAZIERS COPPER, BOLTS, &C. Glaziers' Copper, ordinary sizes, 16 oz. per sq. ft., and over \$\psi\$ \\ \[\text{D}\]. And over \$\psi\$ \\ \text{D}\]. Some sizes, whole 16 oz. and over 12 oz., \$\psi\$ oz. the sizes, whole 16 oz. and over 12 oz., \$\psi\$ oz. the sizes, whole 16 oz. \[\text{D}\] as 320 Glaziers' Copper, 10 oz. and 17 oz., \$\psi\$ oz., ft. \[\psi\$ by 36 Claricles less than \$4 \tin. in diameter. \[\psi\$ by 36 Circles \$4 \tin. diameter and over. \[\psi\$ by 36 Segment and Pattern Sheets. \[\psi\$ 30 Segment and Pattern Sheets. \[\psi\$ 30 Sheathing Copper, over 12 oz. \$\psi\$ sq. ft. \[\psi\$ 32 Copper Bottoms. \[\text{N}\] Copper 15 Sheathing except 14x40 inches, and not to exceed 34 oz. to the sq. ft. \[\text{TINNING.} \] | C 10X14 Best. Ordinary I C 14X16 & & & & & & & & & & & & & & & & & & |
| All other size Sheets, 2%0 F sq. ft. For tinning both sides, double the above amount. | IX 20X28 15.50 |
| O'NEILS PATENT PLANISHED COPPER Net. | 80LDER—16 & |
| 14 and 16 os. and heavier. W m 37c By the case W m 36c 12 os. and lighter. Boiler Signs. W m 40c P m 39c | No. 1 13/46 SPELTER.—DUTY: In Pigs, Bars and Plates, \$1.50 \$1.50 B. American, cash |
| 14 and 16 os. and heavier. ** \$\psi\$ 370 By the case. \$\psi\$ 360 12 os. and lighter \$\psi\$ 360 \$\psi\$ 360 \$\psi\$ 16 os. and lighter \$\psi\$ 360 \$\psi\$ 360 os. 1, 14x50. 14 and 16 os. and heavier. ** \$\psi\$ 350 By the case. \$\psi\$ 360 (And all sizes not over so in. wide.) 2xx40x20x00. \$\psi\$ 410 12 os. and heavier \$\psi\$ 410 \$\psi\$ 360 \$\ps | American, eash |
| 24x48x30x50 | Domor Otook Co |
| BRASS. Brown & Sharp's Gauge the Standard for Metals. Old English Gauge the Standard for Wire. | Paper Stock, &c. |
| BRASS MANUFACTURERS' PRICE LIST.—dis. 20 @ 25 %. | White Shirt Cuttings, No. 1 |
| Cash prices for Roll and Sheet Brass. For less quantities than 100 Bs add 30. # B. | White Shirt Cuttings, No. 1 |
| All Nos. not thinner than to No. 28, wider than 2 in, not wider than 1 in | New Canton Flannels. 5 6 64 New Seconds, light. 34 4 New Seconds. dark. 34 4 4 |
| All Nos. to No. as inclusive, and widths over 20 to 20 | No. 2 Whites |
| 140. Whadvance on each No. above Nos. 28 to 38, inclusive. | Seconds, City No. 1. 134 |
| All Brass thinner than No. 8 is Platers' Brass, at 3c Sheets aza, and all sheets cut to particular sizes and longths under 50 in. in width wider than 2 in. 3c Printers' Rules 45c Sheets wider than 30 in. and under 40 is. 47c 49c Ctrcular Sheets, in diam. from 4 in. to 14, inclusive. 49c | Manila Rope, Tarred. 34 6 2% Gunny Bagging, No. 1. 25 6 24 |
| Sheets wider than 30 in. and under 40 tm | Kentucky Bagging 44 6 44 Burlap Bagging, No. 1 24 6 3 |
| 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | Hemp Twine Stock. 44 6 45 Hard White Shavings No. 1 44 6 45 Soft White Shavings No. 1 |
| 40 W more than High Brass. | White Shavings, No. 2, soft. 314 314 Mixed Shavings, part white. 24 3 34 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 |
| Utilding Metal, 8c # D more than High Brass. In Bars. Se Platers' or Gold Metal Sawed Sic Planed or Polished S4c Se Se Se Se Se Se Se S | Solid Stock. 314 6 |
|) Planed or Polished540
FOR SLITTING.
Metal, in width 1 in. to ½ in. to No. 28, inclusive, 10 ₹ 3 | New Seconds, dark |
| advance. Metal, in width 2 in. to 1 in. thinner than No. 26, 30 * 30 advance. | Straw Board Cuttings |
| Metal, in width i in. to 1/4 in. thinner than No. 28, 30 P B
advance.
Metal in width 1/4 in. to 1/4, inclusive, not thinner than | Paints, Oils, &c. |
| | |
| No. 28, 2C # B advance. | Paints. |
| No. 28, 2C # B advance. | Paints. Black Lamp, Coach Painters |
| No. 28, 2C # B advance. | Paints. Black Lamp, Coach Painters \$ 5 500 Black Lamp, Ordinary \$ 6 5 Black Lamp, Ordinary \$ 1 6 50 Black Lamp, Ordinary \$ 2 6 Black Incompose \$ 2 6 Black Paint, in oil \$ 6 50 |
| No. 28, 2C # B advance. | Paints. Black Lamp, Coach Painters. ♥ 5 500 Black Lamp, Ordinary ♥ 5 60 Black Ivory Drop, fair 12 € 19 Black Ivory Drop, best 230 Black Fair, in oil 466 550 Blue Prussian, fair to best 46 550 Blue Chinese dry 790 Blue Utramarine 16 € 360 |
| No. 28, 2C # B advance. | Paints P |
| No. 28, 2C # B advance. | Paints P |
| No. 28, 2C # B advance. | Paints P |
| No. 28, 2C # B advance. | Paints. Black Lamp, Coach Painters |
| No. 28, 2c \(\psi \) hadvance. Metal. in width \(\frac{1}{2} \) in to \(\frac{1}{2} \) thinner than No. 28, 2c \(\psi \) advance. Motal, \(\frac{1}{2} \) in. in width and less, soc \(\psi \) B advance. Any of the above widths cut to particular lengths, add 70 \(\psi \) B. GERMAN SILVER MARKET METAL AND WIRE. Market Metal. Wire 4 per cent., 12 inch to No. 26 | Paints. Paints. Paints. Paints. Pa boe Black Lamp, Coach Painters. Pa boe Black Lamp, Ordinary. Pa be be Black Ivory Drop, fair. 12 6 15c Black Ivory Drop, best. 326 Black Paint, in oil. kegs 8c; assi'd cans, 11c Blue Prussian, fair to best. 40 6 55c Blue Prussian, fair to best. 10 6 55c Blue Prussian, fair to best. 10 6 12c Brown, Spanish 11 6 20 Brown, Van Dyke. 10 6 12c Green, Chrome. 11 6 36 36 Green, Parls. 11 6 16 36 Green, Parls. 12 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| No. 28, 2c \(\psi \) Badvance. Metal. in width \(\frac{1}{2} \) in. to \(\frac{1}{2} \) thinner than No. 28, 2c \(\psi \) Badvance. Motal, \(\frac{1}{2} \) in. in width and less, sec \(\psi \) B advance. Any of the above widths cut to particular lengths, add 70 \(\psi \) B. GERMAN SILVER MARKET METAL. AND WIRE. GERMAN SILVER MARKET METAL. AND WIRE. 4 per cent., 12 inch to No. 26 | Paints. Black Lamp. Coach Painters |
| No. 28, 2c \(\psi \) Badvance. Metal. in width \(\frac{1}{2} \) in. to \(\frac{1}{2} \) thinner than No. 28, 2c \(\psi \) Badvance. Motal, \(\frac{1}{2} \) in. in width and less, sec \(\psi \) B advance. Any of the above widths cut to particular lengths, add 70 \(\psi \) B. GERMAN SILVER MARKET METAL. AND WIRE. GERMAN SILVER MARKET METAL. AND WIRE. 4 per cent., 12 inch to No. 26 | Black Lamp, Coach Painters \$ 5 0c |
| No. 28, 2c \(\psi \) Badvance. Metal. in width \(\frac{1}{2} \) in. to \(\frac{1}{2} \) thinner than No. 28, 2c \(\psi \) Badvance. Motal, \(\frac{1}{2} \) in. in width and less, sec \(\psi \) B advance. Any of the above widths cut to particular lengths, add 70 \(\psi \) B. GERMAN SILVER MARKET METAL. AND WIRE. GERMAN SILVER MARKET METAL. AND WIRE. 4 per cent., 12 inch to No. 26 | Paints. Pai |
| No. 28, 2c \(\psi \) Badvance. Metal. in width \(\frac{1}{2} \) in. to \(\frac{1}{2} \) thinner than No. 28, 2c \(\psi \) Badvance. Motal, \(\frac{1}{2} \) in. in width and less, sec \(\psi \) B advance. Any of the above widths cut to particular lengths, add 70 \(\psi \) B. GERMAN SILVER MARKET METAL. AND WIRE. GERMAN SILVER MARKET METAL. AND WIRE. 4 per cent., 12 inch to No. 26 | Paints. Paints. Paints. Paints. Pa be Black Lamp, Coach Painters. Pa be Black Lamp, Ordinary. B be Black Ivory Drop, fair. Black Ivory Drop, fair. Black Ivory Drop, fair. Black Ivory Drop, fair. Black Ivory Drop, best. 12 6 196 Black Paint, in oil. kegs 8c; assi'd cans, 1sc Black Paint, in oil. Kegs 8c; assi'd cans, 1sc Blue Prussian, fair to best. Blue Chinese dry. Prec Blue Ultramarine. 16 9 300 Browa, Spaniah. 1146 Brown, Van Dyke. 10 6 123 Green, Chrome, 10 11 Green, Chrome, 10 14 6 18 6 349 Green, Paris, in oil. Green, Paris, modi. G |
| No. 28, 2c \(\psi \) Badvance. Metal. in width \(\frac{1}{2} \) in. to \(\frac{1}{2} \) thinner than No. 28, 2c \(\psi \) Badvance. Motal, \(\frac{1}{2} \) in. in width and less, sec \(\psi \) B advance. Any of the above widths cut to particular lengths, add 70 \(\psi \) B. GERMAN SILVER MARKET METAL. AND WIRE. GERMAN SILVER MARKET METAL. AND WIRE. 4 per cent., 12 inch to No. 26 | Paints. Paints. Paints. Paints. Paints. Pa boc Black Lamp, Coach Painters. Pa boc Black Lamp, Ordinary. B to Calcal Painters. Pa boc Black Ivory Drop, fair. II @ 15c Black Ivory Drop, fair. II @ 15c Black Ivory Drop, pair. II @ 15c Black Ivory Bla |
| No. 28, 2c \(\psi \) Badvance. Metal. in width \(\frac{1}{2} \) in. to \(\frac{1}{2} \) thinner than No. 28, 2c \(\psi \) Badvance. Motal, \(\frac{1}{2} \) in. in width and less, sec \(\psi \) B advance. Any of the above widths cut to particular lengths, add 70 \(\psi \) B. GERMAN SILVER MARKET METAL. AND WIRE. GERMAN SILVER MARKET METAL. AND WIRE. 4 per cent., 12 inch to No. 26 | Paints. Pai |
| No. 28, 2c \(\psi \) Badvance. Metal. in width \(\frac{1}{2} \) in. to \(\frac{1}{2} \) thinner than No. 28, 2c \(\psi \) Badvance. Motal, \(\frac{1}{2} \) in. in width and less, sec \(\psi \) B advance. Any of the above widths cut to particular lengths, add 70 \(\psi \) B. GERMAN SILVER MARKET METAL. AND WIRE. GERMAN SILVER MARKET METAL. AND WIRE. 4 per cent., 12 inch to No. 26 | Paints. Paints. Paints. Paints. Pa boc Black Lamp, Coach Painters. Pa be to Black Ivory Drop, fair. 12 6 15c Black Ivory Drop, fair. 13 6 15c Black Ivory Drop, fair. 14 6 15c Black Ivory Drop, fair. 15 6 15c Black Paint, in oil. 16 6 25c Blue Prussian, fair to best. 17 6 15c Blue Prussian, fair to best. 18 6 25c Blue Prussian, fair to best. 18 6 25c Blue Chinese dry. 18 6 25c Brown, Van Dyke. 18 |
| No. 28, 2c \(\psi \) Badvance. Metal. in width \(\frac{1}{2} \) in. to \(\frac{1}{2} \) thinner than No. 28, 2c \(\psi \) Badvance. Motal, \(\frac{1}{2} \) in. in width and less, sec \(\psi \) B advance. Any of the above widths cut to particular lengths, add 70 \(\psi \) B. GERMAN SILVER MARKET METAL. AND WIRE. GERMAN SILVER MARKET METAL. AND WIRE. 4 per cent., 12 inch to No. 26 | Paints. Pai |
| No. 28, 3c W badvance. Metal. in width 2 in to 34 thinner than No. 28, 3c W badvance. Motal, 4 in. in width and less, 10c W badvance. Any of the above widths cut to particular lengths, add 70 W b. GERMAN SILVER MARKET METAL AND WIRE. 4 per cent., 12 inch to No. 26 | Sienna, Burnt, in oil 10 @ 16 @ 200 Sienna, Raw |
| No. 28, 3c W badvance. Metal. in width 2 in to 34 thinner than No. 28, 3c W badvance. Motal, 4 in. in width and less, 10c W badvance. Any of the above widths cut to particular lengths, add 70 W b. GERMAN SILVER MARKET METAL AND WIRE. 4 per cent., 12 inch to No. 26 | Sienna, Burnt, in oil 10 @ 16 @ 200 Sienna, Raw |
| No. 28, 3c W B advance. Metal. in width 2 in to 34 thinner than No. 28, 3c W B advance. Motal, 4 in. in width and less, 10c W B advance. Any of the above widths cut to particular lengths, add 70 W B. GERMAN SILVER MARKET METAL AND WIRE. Market Metal. Wire | Sienna, Burnt, in oil 10 @ 16 @ 200 |
| No. 28, 3c W B advance. Metal. in width 2 in to 34 thinner than No. 28, 3c W B advance. Motal, 4 in. in width and less, 10c W B advance. Any of the above widths cut to particular lengths, add 70 W B. GERMAN SILVER MARKET METAL AND WIRE. Market Metal. Wire | Sienna, Burnt, in oil 10 @ 16 @ 200 |
| No. 28, 3c W B advance. Metal. in width 2 in to 34 thinner than No. 28, 3c W B advance. Motal, 4 in. in width and less, 10c W B advance. Any of the above widths cut to particular lengths, add 70 W B. GERMAN SILVER MARKET METAL AND WIRE. Market Metal. Wire | Sienna, Burnt, in oil 10 @ 16 @ 200 |
| No. 28, 26 W B advance. Metal: In width 26 in to 34 thinner than No. 28, 26 W B advance. Any of the above widths cut to particular lengths, add 70 W B. Motal, 46 in. In width and less, 100 W B advance. Any of the above widths cut to particular lengths, add 70 W B. GERMAN SILVER MARKET METAL AND WIRE. Market Metal. Wire 4 | Sienna, Burnt, in oil 10 @ 16 @ 200 |
| No. 28, 26 \$ B advance. Metal. in width and less, 100 \$ B advance. Any of the above widths cut to particular lengths, add 70 \$ GERMAN SILVER MARKET METAL AND WISE. Market Metal. Wire 4 per cent., 12 inch to No. 26 | Sienna, Burnt, in oil |
| Metal: in width and less, see \$\mathbb{P}\$ advance. Motal, \$\forall \text{in}\$ in width and less, see \$\mathbb{P}\$ advance. Any of the above widths cut to particular lengths, add 70 \$\mathbb{P}\$ accepted to the above widths cut to particular lengths, add 70 \$\mathbb{P}\$ accepted to the above widths cut to particular lengths, add 70 \$\mathbb{P}\$ accepted to the above widths cut to particular lengths, add 70 \$\mathbb{P}\$ accepted to \$\mathbb{N}\$ and \$\mathbb{N}\$ accepted to \$\mathbb{N}\$ and \$\mathbb{N}\$ accepted to \$\mathbb{N}\$ and \$\mathbb{N}\$ accepted to \$\mathbb{N}\$ ac | Sienna, Burnt, in oil |
| Metal: in width and less, see \$\mathbb{P}\$ advance. Motal, \$\forall \text{in}\$ in width and less, see \$\mathbb{P}\$ advance. Any of the above widths cut to particular lengths, add 70 \$\mathbb{P}\$ accepted to the above widths cut to particular lengths, add 70 \$\mathbb{P}\$ accepted to the above widths cut to particular lengths, add 70 \$\mathbb{P}\$ accepted to the above widths cut to particular lengths, add 70 \$\mathbb{P}\$ accepted to \$\mathbb{N}\$ and \$\mathbb{N}\$ accepted to \$\mathbb{N}\$ and \$\mathbb{N}\$ accepted to \$\mathbb{N}\$ and \$\mathbb{N}\$ accepted to \$\mathbb{N}\$ ac | Sienna, Burnt, in oil |
| Metal: in width and less, see \$\mathbb{P}\$ advance. Motal, \$\forall \text{in}\$ in width and less, see \$\mathbb{P}\$ advance. Any of the above widths cut to particular lengths, add 70 \$\mathbb{P}\$ accepted to the above widths cut to particular lengths, add 70 \$\mathbb{P}\$ accepted to the above widths cut to particular lengths, add 70 \$\mathbb{P}\$ accepted to the above widths cut to particular lengths, add 70 \$\mathbb{P}\$ accepted to \$\mathbb{N}\$ and \$\mathbb{N}\$ accepted to \$\mathbb{N}\$ and \$\mathbb{N}\$ accepted to \$\mathbb{N}\$ and \$\mathbb{N}\$ accepted to \$\mathbb{N}\$ ac | Sienna, Burnt, in oil |

| Mandaul Danne Bukarandar Mile a content | Phonts |
|---|--|
| Mandrei Drawn Tubes under 34 in. 2 cents per pund advance. | Frostings |
| ZINC TUBING-dis. 25 %. | Glue, White 24 @ 350 Glue, Sheet 200 Glaziers' Points, Zinc 80 Gum. Const. |
| 1 | Glue, Sheet |
| sch and Extra Patterns30 | Gum, Damar250 |
| er cent | Gum Shellac, English, dark |
| er cent | Litharge, English |
| or cond | Punice Stone, selected Lumps4@ 6c |
| er cent | Pine Tar, bbls |
| er cent | Putty in bladders |
| Front | Putty, in bulk |
| BKLDUTY: Bars, Ingots, Sheets and Colls, | Rosin-Common and Good-Strained \$2.40 |
| ove 11, 3c # B; over 11, 316c * B, and 10 % ad val. | G & H |
| ilway Bars, 146 \$ b. Railway Bars, in part Steel, | 1 & K3.10 @ \$3.30 |
| m Iron by the Bessemer or pneumatic process, of | Spirits Turpentine. 5646 @ 57460 |
| | Whiting Spanish |
| erican Cast Steel. r American Steel see quotations under heading of | Waste, No. 1 Cop |
| r American Steel see quotations under heading of
littsburgh. | Waste, No. 2 White Machine |
| it Cast. 30 % velde. | Waste, No. I Colored |
| tra Cast 10 % Tolic | Waste, Washed Machine |
| | Glass. |
| st Double Shear. | FRENCH WINDOW GLASS. |
| aged, Cast. P b 18c st Double Shear. D 15/6c ster. 1st quality P b 13c | Prices current per box of 50 feet. |
| nan Steel, Best Who had a cuality Who had a cual | Single Thick.—Discount 50 & 10 % to 50, 10 & 5 %. |
| quality | SIEES. 18t. 2d. 3d. 4th. |
| quality \$ \$ 14160 | |
| quanty w b1234c | 6 x 8 to 10 x 15 |
| FIMONY. See Trade Report; D.—DUTY: Pig. \$2 \$7 100 \$3; Old Lead, 1½0 \$7 \$5. ead Sheet, 2½0 \$7 \$5. clean | 18 X 22 to 20 X 30 |
| e and Sheet, 2%c P B. | 15 X 36 to 24 X 30 |
| rican5%c @ 6 | 26 X 36 to 26 X 44 11.75 10.75 9.50 |
| | 26 X 46 to 30 X 50 13.25 12.50 10.50 |
| | 30 X 52 to 30 X 54 |
| Drop 20, Buck, 8c | 34 X 58 to 34 X 60 15.50 15.00 13.25 |
| | 0 X 8 0 10 X 15. |
| U.B. BABBITT METAL. V.B. 90 cc; El. 20c; C. 14. —DUTY: Plates. Sheets, Tagger and Terme, I.ic; Electro-galvanized Plates, 20 W.B.; Manufaces of, not enumerated, 35 per cent. ad val. Bars, ck and Pigs free. Banca, subject to duty of 10 cent. | Double Thick.—Discount 50 & 10 % to 50, 10 & 5 %. |
| ce B. 200; C. 14. | sizes. ist. 2d. 3d. |
| : Electro-galvanized Plates, 2c @ h : Manufac- | 6 X 8 to 10 X 15. 8 8.25 8 7.75 97.50 8 7.00 11 X 14 to 16 X 24. 10.00 9.75 8.75 8.25 11 X 14 to 16 X 24. 10.00 9.75 8.75 11.75 10.75 11.75 10.75 12.7 |
| es of, not enumerated, 35 per cent. ad val. Bars, | 6 X 8 to 10 X 15 |
| cent. Hanca, subject to duty of 10 | 18 X 23 to 20 X 90 12.75 11.75 10.75 |
| ₩ 15 28 @ | 26 X 38 to 24 X 36 |
| a₩ 10 25 @ 260 | 26 X 36 to 26 X 44 10.25 14.75 13.00 |
| sh₽ B aq ⊕ a6c
TIN PLATES. | 20 X 40 to 30 X 50 |
| X14 Prime Charcoal \$6.50 @ 6.75 | 30 X 56 to 34 X 56 10.50 18.25 10.25 |
| x12, Prime Charcoal 6.75 @ 7.∞ | 34 X 58 to 34 X 60 20.50 19.50 18.00 |
| X14 Prime Charcoal | 30 2 00 40 40 2 00 23.00 21.00 20.00 |
| | An additional to per cent. will be charged for all
Glass more than 45 inches wide. Any size over 52
nches in length, and not making more than 81 united |
| ### Charcoal ### ### ### ### ### ### ### ### ### # | nches in length, and not making more than 81 united |
| 8.25 | nches will be charged in the 84 united inches bracket. |
| each additional X add | |
| Rest Ordinary | |
| X14 85.75 6.00 (12 | Toledo Spring and Variety Works. |
| 112 @ 6.50 6.00 @ 6.25 | releas ohimb and ratioty works. |
| TERNE PLATE. | The same of the sa |
| Prime Char. ad Qual. Coke. | |
| TERNE PLATE. Prime Char. ad Qual. Coke. 38-75 @ 0.00 \$ 590 @ 5-75 \$ 9-5-58 Exo. 7-50 @ 0.00 \$ 11.75 \$ 11.00 136. 12.25 @ 11.50 @ 11.75 \$ 11.00 136. 15.50 @ 0.00 15.5 | Carried Street Street |
| 11.50 11.75 | Sand |
| 10.50 6 | The state of the s |
| C20 M. F. Brand | The state of the s |
| DER-1/4 & 1/4 | |
| | |
| LTERDUTY: In Pigs, Bars and Plates, \$1.50 | |
| can, eash | |
| can, eash | |
| | |

The Celebrated American Suspending Kave Trough Hanger.
(Woodruff's Patent.) The Best in the World
NANUFACTURED BY

HEARTLEY & DEMPSEY, 297 St. Clair Street, Toledo, Ohio. 13° Send for prices. N. — Also manufacturer of Children's Carriage Springs, Attachments, Wagon Seat Springs and Sea

RUBBER & LEATHER HOSE, PACKING,

Lace Leather, Wringer Rolls, Grain Drill Tubes, &c. Rubber goods of all kinds at manu-acturers' prices. Send for Price List.

R. T. WHELPLEY,

Gen'l Agent, HAMILTON RUBBER CO., 131 and 133 Lake St., Chicago, Ill.

INTERCHANGEABLE LOCK-CORNER SHELF BOXES, Serew Cases, &c.,
FOR THE HARDWARE TRADE,
S. H. GREEN
19 Murray St., New York.



H. V. CARTER, 290 Pearl Street, New York.

The largest assortment n the Un d States.

Manufacturer of MOULDERS' TOOLS Also a full line of Plasterers' Tools.

TRENTON VISE & TOOL WORKS. PROPRIETORS OF

PICKS, MATTOCKS, GRUB HOES, HAMMERS.

WROUGHT IRON STEEL FACE (P. W. PATTERN.)



Bole Agents for

H. Boker & Co.'s Celebrated "Tree" Brand Cuttery.

R. Heinisch's Sons Unrivalled Shears, Trimmers, Scissors, Japanned and Nickeled.

Gardner's 1881 Razors.

J. W. GARDNER'S

Unequaled and 44 Warranted Superior to All"

Pocket Knives and Barlows.

Also a full stock of

Manhattan and O. K.

W. Butcher's Files and Tools. NEW ENGLAND CUTLERY CO. TABLE CUTLERY, Guns and Pistols FISHING TACKLE.

Arms and Ammunition.

POCKET CUTLERY & RAZORS.

NAIL ROD, RIVET ROD, and

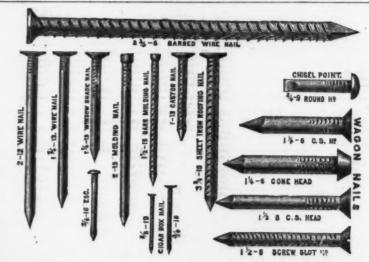
Other Special Rolling.

To meet the demands of our own business for a superior quality of work, we have erected a new and improved Eod and Tack Plate Mill, especially designed for the finest and most accurate work. As our own requirements do not utilize our entire capacity, we are prepared to receive and promptly execute orders for rolling a liberal quantity of this class of work. Our location in Boaton affords the most favorable facilities to importers of Swedish and other Iron, for having the material rolled into its required form before shipment.

Special Prices and terms given on application.

Contracts for rolling over a period of several years made if desired.

GLOBE NAIL CO. Howard Street, Boston Highlands, Mass.



Steel, Iron and Brass Nails and Barbed Nails
Of every kind.

Roofing and Moulding Nails, Escutcheon Pins, Chair and Caster Nails, Cigar
Box and Window Shade Nails, Wagon and Boat Nails.

Manufactured by

....

Cleveland, Ohio.

AGENTS:

NEW YORK—A. Hammacher & Co. BOSTON—John Wales & Co. PHILADELPHIA—Heaton & Denckla Hdw. Co. PITTSBURGH—Joseph Woodwell & Co.

BUFFALO—Pratt & Co.
LOUISVILLE—W. B. Belknap & Co.
CHICAGO { Hibbard, Spencer & Co.
N. D. Pratt, qr Lake Street,

Nos. 30 & 32 West Quincy St., Chicago, Ills.,

and Dealers in Babbitt Metals, Ingot Copper,

Pig Tin, Tin Solders, Antimony, Pig Lead, Ingot Brass, Spelter, Nickel, Brass Castings, Patent Nickel Bronze, Car Bearings, Patent White Brass.

Old Metals, Turnings, Drosses and Skimmings Wanted.

Bradley's Edge Tools.

Butchers' Cleavers, Butchers' Choppers, Axes and Hatchets, Grub Hoes and Mattocks, Mill Picks, Box Chiseis and Scrapers,

Ax Eye Bush Hooks,
Ax Eye Bush Hooks,
Socket Bush Hooks,
Watt's Ship Carpenters' Tools,
Carpenters' Drawing Knives,
Coopers' and Turpentine Tools.

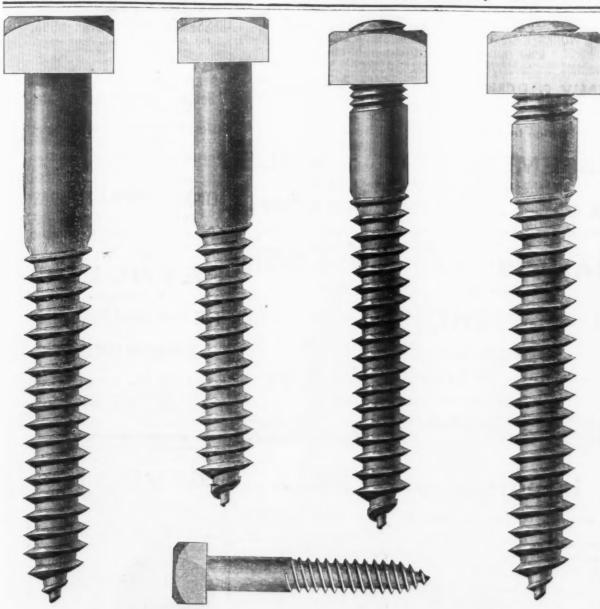
MARTIN DOSCHER, Agent, 85 Chambers Street, N. Y.

LLAIRE NAIL WORKS,

PIG IRON AND NAILS,

Manufacture the Celebrated Brand of

Office and Works, - - BELLAIRE, OHIO.





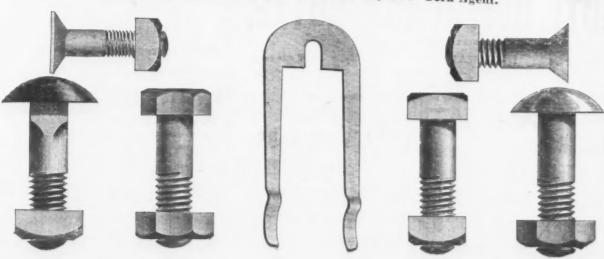
WILLIAM H. HASKELL & CO MANUFACTURERS OF

BOLTS & COACH SCREWS

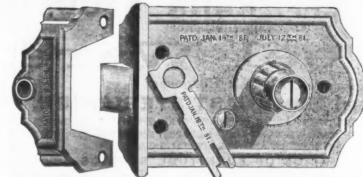
277 Main St., Pawtucket, R. I.

SEND FOR CATALOGUE.

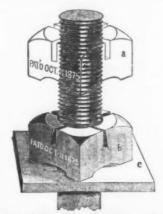
HENRY B. NEWHALL, 105 Chambers St., New York Agent.

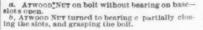


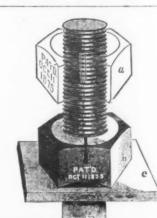
BARNES' NEW RIM NICHT LATCH.



H. F. SISE, Sole Agent, 100 Chambers St., New York.





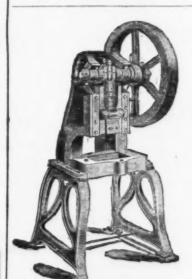


Atwood Nur on bolt without bearing on base-

a. Atwood Nut on don without see, partially clos-ide topen.
b. Atwood Nut turned to bearing e, partially clos-ing the slot, and grasping the bolt.

Springfield, Mass., July 1, 1855.

the practical value of the "Atwood Safety Nut." It



G. A. CROSBY & CO.,

259 & 261 Randolph St.,

CHICAGO, ILL., Manufacturers of all kinds of

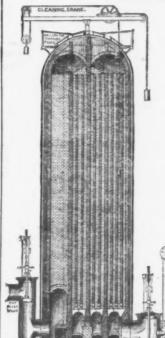
Power, Screw, Hand, Foot and Drop

And Special Tools for Tin Can Makers and Sheet Metal Workers.

Send for Catalogue and Price List.

WITHEROW & GORDON,

ENGINEERS.

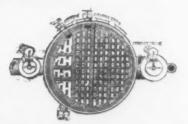


Whitwell Fire-Brick

HOT-BLAST STOVES

Contract for erecting the same. Also, for Building and Replacing all types of Blast Furnaces. Combining Economy with Efficiency and Modern Improvements, wherein the output of Furnaces is increased fully 50 per cent. and the fuel consumption decreased in the same ratio,

Our Blast Engines, Hoisting Engines, &c., have no superior in strength of parts, duty or economy. We solicit an opportunity to make prorosals on Blast Furnaces, Rolling Mill or Steel Works Machinery.



Main Office, 86 Water St., Pittsburgh, Pa.

WORKS, NEW DASTLE MA

Steel.

WOLFF, KAHN & CO.,

Steel Wire

Special Finest CAST STEEL WIRE,

MARKET STEEL WIRE, PRIME COPPERED SPRING WIRE, TEMPERED AND UNTEMPERED STEEL WIRES, IN LONG LENGTHS, FOR CRINOLINE, CORSET, LOCK AND BRUSH MAKERS, AND ALL SPECIAL PURPOSES.

ALL KINDS OF FURNITURE SPRINGS.

IMPORTERS OF

IRON

STEEL, & RAILS OF EVERY DESCRIPTION.

WIRE RODS, PLAIN AND GALVANIZED WIRES, &c., GUN BARRELS, MOULDS, AND ORDNANCE.

Shipments in bond from American Ports and direct from Europe to all parts of the World. EXPORTERS AND GENERAL MERCHANTS.

WORKS, PEEKSKILL, N. Y. Direct all communications of the

OFFICE & WAREHOUSE, 93 John St., New York.

MILLER, METCALF

Pittsburgh, Pa.,

CRESCENT

In Bars, Sheets, Cold-Rolled Strips, &c.

Polished, Compressed Drill Rods and Wire.

Warranted equal to any imported in quality, finish and accuracy.

Also Common Grades.

Established 1810.

SHEFFIELD, ENGLAND.

DOG BRAND" FILES.

For Drills, Cold Chisels, Tools, Taps, Dies, &c. COLD ROLLED STEEL for Clock Springs, Corsets, &c. SHEET CAST STEEL for Springs, Saws, Welding and Stamping Cold, &c. GERMAN, MACHINERY, ENGLISH AND SWEDES SPRING STEEL, An I all other descriptions for ma

Warehouse, 30 Gold Street, New York. HENRY MOORE, Agent. Near John ctreet.

C. WARDLOW.

Sheffield, England,

Manufacturers of the Celebrated

Cast and Double Shear STEEL.

In Bars, Sheets and Coils, for fine Pen and Pocket Cutlery, Table Knives, Mining Tools, Dies, Files, Clock and other Springs, and Tools of every variety. Warehouse, 95 John Street, New York.

WILLIAM BROWN, Representative.

BESSEMER

STEEL

ERAM SYARDERO

Iron Rail and Fastenings.

SPRING STEEL

WIRE OF ALL KINDS.

Tire, Axles and other Forgings Botter Plate, Salvanized and Black Sheet Iron, Corrugated in Siding of Stemens-Martin, Bessemer Steel and Iron.

CLEVELAND, OHIO. New England Agency, Western Agency

91 Lake Street, Chicago. N. D. PRATT, Agent.

239 Franklin Street, Boston. JOHN WALES & CO., Agents.

THE MIDVALE STEEL CO.

NICETOWN, PHILADELPHIA.

Best Warranted Cast Steel for Machinists' Tools.

Taps, Dies, Punches, Shear Blades, Chipping Chisels and Granite Rock Drills, Extra Mild Center Steel, special for Taps,

MACHINERY AND CAST SPRING STEEL, HEAVY AND LIGHT FORGINGS.

Warehouse, No. 12 North 5th St., Philadelphia.

Gautier Steel. See Page 3.

Steel.

WORKS. R. NEWARK STEEL BENJAMIN ATHA & CO.,

Manufacturers

And grades of Steel specially adapted for Lathe Tools, Chisels and Taps and Dies.

Warranted most superior for TOOLS AND GRANITE ROCK DRILLS. A full assortment of this universally approved OLD BRAND and other Steels for sale by

EDWARD FRITH & SON, Agents,

No. 241 Pearl St., New York.

LABELLE STEEL WORKS.

SMITH, CO.,

Also Springs, Axles, Rake Teeth, &c.

OFFICE & WORKS, Ridge, Lighthill & Belmont Sts., & Ohio River, Allegheny, Post Office Address, Pittsburgh, Pa.

Represented at Boston by WETHERELL BROS., 31 Oliver St.; at Philadelphia by JAMES C, HAND & CO. 14 and 515 Market St.; at Cleveland by CONDIT, WICK & CO., 153 Water St.

ALBANY & RENSSELAER IRON & STEEL CO., Troy, N. Y.,

Office in New York City, 56 Broadway,

BESSEMER STEEL RAILS.

Machinery Steel, Merchant and Ship Iron.

HORSE SHOES.

SAM'L G. B. COOK & CO., Agents for Southern States, 67 and 69 German Street, Baltimore, Md.

FRANCIS HOBSON & SON 97 John Street, NEW YORK

Sele Manufact'rs of "CHOICE" Extra Cast Steel. Iron and Steel Merchants

Manufacturers of all Descriptions of Steel. Manufacturers of Every Kind of Steel Wire.

Don Works, Sheffield, England.

CHAS. HUGILL, Agent. GEO. SANDERSON & CO.,

Importers of STEEL,

Removed to 30 Gold Street, New York.

Particular attention is paid to quality and temper for Files, Saws, Edge Tools, PABLE and POCKET CUTLERY, TOOLS. TAPS and DIES; also for COLD ROLLED STEEL for CLOCK SPRINGS, CORSET CLASPS, &c.

A Large Assorted Stock of JOHN ROTHERY'S FILES always on hand. Warranted Superior to any Steel in the Market, either English or American, for every purpose. Combination Chrome Steel and Iron for

Safes, Jails and Deposit Vaults. Send for Circular Price List. ome Steel Works,

t Avenue and Keap Street, BROOKLYN, E. D., N. Y. 40 Dearborn Street, Cincinnati Branch,

123 Central Avenue,

JOLIET STEEL COMPANY,

The Company Warrant its Rails equal in quality to United States.

LEX. J. LEITH, Prosident.
V. R. BTIRLING, Treasurer
L. E. SARGEANT, Secretary

CHICAGO.

Office. Rooms D and E. Honore Building.

(H. S. SMITH, General Sup't. JOLIET. Works, Joliet, Ill.

OBERHAUSEN, ON RUHR. Established 1781.

8500 men employed.

BRAND:

STEEL RAILS,

STEEL WIRE RODS.

STEEL BLOOMS. SPIEGELEISEN. FERROMANGANESE UP TO 80 PER CENT.

GODEFFROY & CO., Sole Agents for the United States. 43 New Street, NEW YORK.

Steel.

MUSHET'S Special Steel

LATHES, PLANERS, &c. Turns out at least double work by increased speed and feed, and cuts harder metals than any other steel. Neither hardening nor tempering required.

SAMUEL OSBORN & CO., Sheffield, England.

Represented in th eUnited State by B. M. JONES & CO., Nos. 11 & 13 Oliver Street, BOSTON.

NAYLOR & CO.,

99 John St., New York, 6 Otiver St., Boston, Mass. W. R. HART, Agent,

208 S. Fourth St., Philadelphia, Pa. STEEL AND IRON RAILS,

Tin and Terne Plates, Swedish and Norway Iron, BESSEMER STEEL WIRE RODS,

Pig Iron, Spiegeleisen, Ferromanganese, Scrap Steel and Old Iron Rails.

STEEL COMPRESSED SHAFTING, Benzon" Homogeneous Plates For Bollers, Fire-boxes, &c.

Axles, Crank Pins, Spring Steel, And all other kinds of Martin-Siemens Steel and Iron

REYNOLDS, CARTER & REYNOLDS

For Railroad purposes

3 Clements Lane, LONDON, E. C. Lombard Street,

Cable Address : REYNOLDS.

London,

ENGINEERS.

Exporters of Iron and Steel Rails, Blooms, Spiegeleisen, Pig Iron, Old Rails, Scrap Iron, Iron Ore, and all kinds of Railway Plants, Engines and Piping for Waterworks, Mining Machinery, &c.

The Most Durable and Best Selling

It has no valves to become obstructed and no screw joints to become immovable by rust.

Advantages of the Crosby Bucket over all others:—i.

Advantages of the Crosby Bucket over all others:—i.

It has an age of the Crosby Bucket over all others:—i.

to the bottom of the well.

base of the bucket being is of an inch larger at the base of the bucket being is of an inch larger at the bottom than bore in the tubes, which allows it to expand, and the growe in the side to contract.

The wear comes on the wear comes on the meaning lade, and not meaning and the growth of the side of



wear comes on the whole side, and n

EMPIRE STATE MFG. CO.



Copper, Half Copper, Nickel Plated TEA KETTLES. Metal Spinning.

A. PARDEE, Hazelton, Pa. J. G. FELL, Phila.

PARDEE

237 South Third St., PHILADELPHIA,

No. 111 Broadway, New York. MINERS AND SHIPPERS OF

ehigh Coals.

The following superior and well-known Lehigi Coals are mined by ourselves and firms connected with us, vis.

A. Pardee & Co. 1

Pardee, Bro. & Co. LATTIMER Calvin Pardee & Co, HOLLYWOOD

Pardee, Sons & Co. MT. PLEASANT

Steel.

PITTSBURGH, PA.

EDGAR THOMSON STEEL WORKS DEPARTMENT.

Works at Bessemer Station, P. R. R.

Branch Office and P. O. Address, 48 Fifth Ave., MANUFACTURERS OF

STEEL RAILS. BLOOMS & INCOTS

OF SUPERIOR QUALITY.

Union Iron Mills Department

Mills at Thirty-third St. and A. V. R. R.

Branch Office and P. O. Address, Thirty-third St. MANUFACTURERS OF

STRUCTURAL IRON.

Bridge Iron, Iron Beams, Channel Bars, Car Truck Channels, Angles, Tees, Universal Mill Plates, Bar Iron, Light Steel and Iron Rails. Special attention given Unusual Shapes and Sizes.

Lithographs of sections and book of detailed information giving calculation of strain, &c., furnished to Engineers and Architects on application.

NEW YORK OFFICE: Room 32, No. 55 Broadway, N. Y.

Works at Chicago, III., and Milwaukee, Wis.

MERCHANT BAR, FISH PLATES, PIG METAL,

IRON RAILS & BESSEMER STEEL RAILS Present Annual Capacity of these Works. Total Capacity per year ... OFFICES,

THE MONTOUR IRON & STEEL COMPANY.

WORKS AT DANVILLE, PA. PIG IRON, T AND STREET RAILS,

THE SIEMENS-ANDERSON STEEL CO., Successors to ANDERSON & CO.,

Crucible Tool, Cast Spring, Cast Plow, Iron Centre, Soft Centre, and Iron Back Plow, also Open Hearth

Spring, Tire, Plow, Machinery, and

President, THOS. T. FLAGLER, of the Holly Manufacturing Co., Lockport, N. Y. Treasurer, L. M. LAWSON, of Donnell Lawson & Simpson, New York. Asst. Treasurer, S. A. COSGRAVE, Pittsburgh, Pa. Secretary, C. G. HILDRETH, New York. Vice President and General Manager, ROBT. J. ANDER SON, Pittsburgh. Attorneys, Messrs. ARTHUR, KNEVALS & RANSOM, New York.

JNO. C. PORTER, Sec'y and Treas.

SPANG STEEL AND IRON CO., Limited,

OPEN HEARTH STEEL

BILLETS ANGLES, SQUARES,

Steel for Agricultural and other Purposes.

UNIVERSAL MILL PLATES

Of Steel and Iron, up to 30 inches wide, and of any desired thickness and length. Address, PITTSBURGH, PA.

THE CLEVELAND

Manufacturers of TOOL. MACHINERY, T

TIRE,

оню.

STEEL CO.

E. C. ATKINS & CO.



DIAMOND BRASS WORKS, York, Pa.
FREY & BROOMELL, Manufacturers of
HEAVY AND LIGHT BRASS CASTINGS. CAR BRASSES AND BABBIT METAL A SPECIALTY.
HOUSE, PRICE PAIR FOR OLD METALS. HIGHEST PRICE PAID FOR OLD METALS.

Mare having shows their great popularity and superiority.

There never was a Spring made that is so durable, so complete in its action, operating with a uniform pressure, holding the door tight when closed, and allowing it to open without increasing the pressure at any point.

When the door is opened about 130 degrees of a circle, it will press and hold it open. The Spring is easily unhooked and rehooked-in an instant-from the door and also

from the jamb, without removing a screw or pin.

This is a Convenience Possessed by no other Spring in the Market.

We are making this season three sizes, viz:

No. 1 For Screen or Light Storm Doors. No. 2 For Medium Doors.

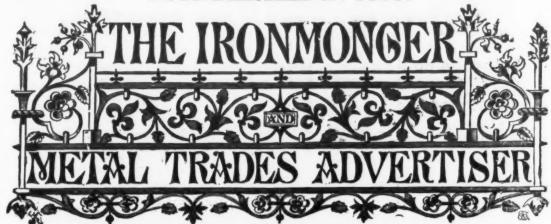
No. 3 For Heavy Doors.

They are for sale by most of the prominent jobbers of the United States and Canada.

FREDERIC

FREEPORT, ILLINOIS.

ESTABLISHED IN 1859.



PUBLISHED EVERY SATURDAY.

THE OLDEST AND CHIEF REPRESENTATIVE OF THE IRON, HARDWARE AND METAL TRADES. OFFICE: 44a CANNON STREET, LONDON, E. C.

Advertisements and Subscriptions are Received at the Various Offices of "THE IRON AGE," NAMELY: NEW YORK OFFICE: DAVID WILLIAMS, Publisher of The Iron Age, 83 Reade street, who will, on receipt of application, supply specimen copies free.

PITTSBURGH OFFICE: 77 Fourth Avenue—JOS. D. WEEKS, CINCINNATI OFFICE: Builders' Exchange—T. T. MOOIE, Manager and Associate Editor.

PHILADELPHIA OFFICE: 220 South Fourth Street—THOMAS

HOBSON, Manager.

Manager.

SOUTHERN OFFICE: Cor. Eighth and Market Streets, Chauseness, C

SPECIAL FEATURES.

Notes of Novelties.—This is a department of the journal always watched with interest by the trade, as it contains an account, from week to week, of the novelties which manufacturers and inventors are introducing to the notice of the trade. These articles are freely illustrated.

Special Correspondents.—The bromonger has a deserved reputation for its special correspondence from all the principal Continental, British and manufacturing centers. The writers are gentlemen holding important positions in the districts with which they are connected, and possess facilities for acquiring information specially suited for the columns of the brommonger. The Week, Legal News, Trade Notes, Bankruptcies, Foreign Notes, Colonial Jottinus, Merchanis' Circulars. Sc., are each department of the journal, containing a digest of all matters of direct interest to the Iron, Hardware and Metal Trades. In addition to the above, there is a carefully classified hat of Patents, together with Editorial Notes, Frence, Belgian and other Special Correspondence.

to the Ironmonger and Metal Trades' Advertiser, with which is sent every fourth week the Foreign Supplement (see below), may commence from any date, but are not received for less than a year complete. The rate is \$5 per annum, inclusive of postage to any part of the world outside Great Bruam, To every subscriber is presented, free, in the course of his year, a handsome and useful Ironmongers' Diary and Text Book, a work sold to not subscribers at 75 cents.

ADVERTISEMENTS

are inserted in the Ironmonger and Metal Trades Advertiser at the subjoined rates, from which no variation can be made on any ground whatever,

Size of Page-Nine Inches Deep by Six Inches Wide. One Advertisement of every Series of 13 Monthly, 27 Fortnightly, or 53 Weekly, will be inserted in the Ironmongers' Diary and Text Book, published toward the end of each year, and presented to every Subscriber."

| | insertions,
each net. | 27
INSERTIONS,
each net. | INSERTIONS,
each net. | insertions,
each net. | insertions,
each net. | INSERTICN,
net. |
|--------------------------|--------------------------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------|
| 0 | Gold.
\$20.00 | Gold.
\$22.50 | Gold.
\$25.00 | Gold. | Gold. | Goid. |
| One page Two-thirds page | | 16.00 | 18.75 | 22.50 | \$35.00
26.25 | \$50.00
37.50 |
| Half page | | 12.40 | 13.75 | 16.50 | 19.25 | 27 50 |
| One-third page | | 9.00 | 10.00 | 12.00 | 14.00 | 25.00 |
| Quarter pagé | | 7.25 | 8.00 | 9.60 | 11.20 | 16.00 |
| One-sixth page | | 5.10 | 5.65 | 6.75 | 7-75 | 11.30 |
| One-eighth page | 3.60 | 4.10 | 4.50 | 5.40 | 6.25 | 9 00 |
| One-sixteenth page | | 2.25 | 2.50 | 3.00 | 3.50 | 5.00 |

SPECIAL ISSUES.

In the spring and autumn of each year there is published a Special Issue, the circulation of which is not less than Twelve Thousand (12,000) copies.

THE IRONMONCERS' DIARY AND TEXT BOOK.

This is an annual, presented free to every subscriber to the IRONMONGER AND METAL TRADES' ADVERTISER. E contains a large number of ruled skeleton pages for diary and other entries, and in addition much useful reference information, varied from year to year. It is handsomely bound in cloth, gilt; and as copies are used in thousands of establishments for a whole year, it is obviously a medium of exceptional value for advertisements. Sold to non-subscribers at 75 cents.

THE FOREIGN SUPPLEMENT.

With which is incorporated The Universal Engineer, in connection with the extensive and world-wide circulation of the Ironwonger itself. The dates of its publication for the

SPRING,

E CLEVELAND,

Is published every fourth week in connection with the extensive and world-wide circulation of the Ironmonger itself. The dates of its publication for the next twelve months will be as follows:

JANUARY 26, FEBRUARY 25, MARCH 25, APRIL 22, MAY 20, JUNE 17, JULY 8, AUGUST 5, SEPTEMBER 2 and 30, OCTOBER 28, NOVEMBER 25 and DECEMBER 23, 1882.

This Supplement is published to

This Supplement is published in FOUR LEADING COMMERCIAL LANGUAGES

of the world, including English, and is sent to all the countries where they are spoken, thus placing the contents of the Ironmonger not only within reach but in the native language of eighty millions of German. forty-two millions of French, twenty-eight millions of Itaian, and fifty-one millions of Spanish speaking people; or, in all, over two hundred millions of inhabitants in the principal actions where the best purchasers of manufactured goods are to be found.

Advertisements are inserted in any language at the following MODERATE TARIFF.

| | Size of Page-13% Inches Deep by 9% Inches Wide. | | | | | | | | |
|----------|---|---|---|--|-----------------------|--|--|--|--|
| | INSERTIONS, each net. | 7
INSERTIONS,
each net. | 3
INSERTIONS,
each net. | | insertions, each net. | 7
INSERTIONS,
each net. | insertion, each net. | | |
| One page | 22.00
17.00 | Gold.
\$33.75
24.75
19.15
14.10 | Gold.
\$37.50
27.50
21.25
15.65 | Quarter page One-sixth page One-sighth page One-sixteenth page | 7.50
6.20 | Gold.
\$11.25
8.45
7.00
3.40 | Gold.
\$12.50
9.40
7.75
4/32 | | |

Advertisers will do well to use Illustrations freely. Where economy of space is an object, a left page illustrated and described in one language can be suitably described in four or more languages on the opposite or right page without illustrating.

THE WHOLE FOREICN HARDWARE TRADE

so far as our experience of twenty years is concerned, will be covered by The Former Supplement at east twice a year. Thus a Price List or Advertigement traceted in the Aromonger and Formers is a strikingly powerful and most efficient way of publicity not to be compared with any early other ordinary channels of communication.

B. KREISCHER & SONS,

Established 1845. Office, foot of Houston Street, East River, NEW YORK.

NEWTON & CO.,

ALBANY, N. T., Manufacturers of

BRICK FIRE Stove Linings,

Range and Heater Linings

Cylinder Brick, &c., &c. For Glass and Steel Works.

Bricks and Cement, English Fire Bricks.

RIMINCTON BROS. & CO., Newcastle-on-Tyne.

Agent on this side S. A. RIMINGTON 40 & 42 Broadway,

NEW YORK. M. D. Valentine & Bro

FIRE BRICK And Furnace Blocks DRAIN PIPE & LAND TILE. Woodbridge, - - - N. J.

BORGNER & O'BRIEN,

FIRE BRICK

Edge Pressed Furnace Blocks, CLAY RETORTS, TILES, &c.,
Twenty-third Street,
Above Race,
PHILADELPHIA.
Twenty years' practical Experience.

WATSON FIRE BRICK CO., ESTABLISHED 1836.

Successors to JOHN R. WATSON, Perth Amboy, New Jersey Manufacturers of

FIRE BRICK,
OR ROLLING MILLS, BLAST FURNACES, FOUN

DRISS GAS WORKS, LIME KILNS, TANNERIES, BOILER and GRATE SETTING, GLASS WORKS, &c. Fire Clays, Fire Sand, and Kaolin for Sale. HENRY MAURER,

Excelsior Fire Brick & Clay

Retort Works,

Manufacturer of FIRE BRICK, HOLLOW
BRICK AND CLAY RETORTS.

WORKS: PERTE AMBOT, NEW JERSEY.

Mice & Depot 418 to 422 East 23d St., N. Y.

TROY FIRE BRICK WORKS, JAMES OSTRANDER & SON,

ESTABLISHED 1848, Manufacturers of FIRE BRICK, files, Blast Furnace Blocks, &c. Miners and g Woodbridge Fire Clay and Sand, and Staten actin.

Established 1864.

GARDNER BROTHERS.

STANDARD SAVAGE FIRE BRICK, TILE & FURNACE BLOCKS,

Clay Gas Retorts and Retort Settings, and Miners and Shippers of Fire Clay. OFFICE: 116 Smithfield St., Pittsburgh, Pa. WORKS: Mt. Savage Junction, Md., and Lockport, Pa.

HALL & SONS,

FIRE BRICK.

Buffalo, N. Y. CHAS. D. COLSON,

CHICAGO, ILL.

UNION MINING COMPANY. Mount Savage Fire Brick.

EDWARD J. ETTING, Agent, No. 230 South Third St., Philadelphia, Pa.

THOMAS MORTON,

CABLE, COPPER, IRON AND STEEL SASH CHAINS, suspending window sashes. Also, Copper Champa Chains, with patent attachments, for same pur-se. Agents wanted in the principal 65 Elizabeth Street, No.

FIRE BRICK. HENRY DISSTON & SONS, BEST AND CHEAPEST. HENRY DISSTON & SONS,

KEYSTONE SAW, TOOL, STEEL & FILE WORKS,

Front and Laurel Streets,

PHILADELPHIA.

DISSTON'S SAMSON TREE PLANTER AND POST HOLE DIGGER.



Patented May 99, 1870. Price. - \$37.50 per dozen.

No Farmer, Nurseryman, Railroad or Telegraph Company

SHOULD BE WITHOUT ONE.

NO BACK-ACHE.

NO KNEE-WORK.

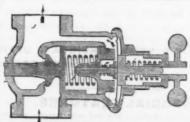
NO CLOGGING.

This tool has been thoroughly tested, and has given the greatest satisfaction to all who have tried it. The principle on which it works makes it self-cleaning and prevents adhesion in sticky soil; therefore it always works free and easy. It is far superior to all plungers, augers and boring machines, as it works well in stony, sandy, or clay soils; quicksand under water is as easily removed as though no water existed.

DIRECTIONS.

Plunge the Digger into the ground, as shown in cut, Fig. 1, and when the soil is loosened pull out the lever with one hand, as shown in cut, Fig. 2, which will press the dirt between the blades; then draw the Digger from the hole, keeping hold of the lever with one hand and the handle with the other. When the Digger is clear of the hole, you can deposit the load anywhere within reach by simply pressing down the lever, which will open the blades and the dirt will fall from between them. The Digger is then ready for another plunge. The steel blades are nine inches long, and the whole tool five feet long. For sale at Hardware and Agricultural Stores.

HENRY DISSTON & SONS.



Curtis Pressure Regulator. CURTIS RECULATOR CO., 59 Beverly Street, BOSTON, MASS



Patentee and Sole Manuf'r in U. S. and Canada, Northville, Fulton Co., N. Y.

THE "EDDY" STRAIGHTWAY FIRE HYDRANTS. Axe, Hatchet, Powder and Brush Machinery.

MOHAWK & HUDSON MFG. CO., WATERFORD, N. Y.

BENTON, FAULKNER & BIRD, N. Y. Agents, C. H. & W. H. MIDDLETON, Phila, Agents.



MPC STENCIL BRAND



MORSE TWIST DRILL AND MACHINE CO. 2

NEW BEDFORD, MASS., Sole Manufacturers of

Morse Patent Straight-Lip Increase Twist Drill, Beach's Patent Self-Centering Chuck, Solid and Shell Reamers, BIT STOCK DRILLS,

DRILLS FOR COES, WORCESTER, HUNTER AND OTHER HAND DRILL PRESSES. BEACH'S PATENT SELF-CENTERING CHUCKS, CENTER AND ADJUSTABLE DRILL CHUCKS, SOLID AND SHELL REAMERS. DRILL GRINDING MACHINES. TAPER REAMERS, MILLING CUTTERS AND SPECIAL TOOLS TO ORDER.

All Tools exact to Whitworth Standard Gauges.

EDWARD S. TABER, Treas

Armstrong's Improved Adjustable Stock and Dies FOR PIPE AND BOLTS.



Tapped to the U. S. and Whitworth Standard Gauges. Adjustable to all variations in the size of ings. Can be resharpened without drawing the temper by simply grinding them. Possessing practical advantages appreciated by all mechanics. Circular and Price List sent free on application.

A.M.MICHAEL, ALBANY, N.Y. Manufactured by F. ARMSTRONG, 30 Starling St., Bridgeport, Conn.

John T. Lewis & Bros. No. 231 South Front St.,



MANUFACTURERS OF

Pure White Lead, Red Lead, Litharge, Orange Mineral, Linseed Oil, AND PAINTERS' COLORS.

Brooklyn White Lead Co.



White Lead, Red Lead & Litharge. No. 182 Front Street, NEW YORK,

JOHN JEWETT & SONS WHITE LEAD.



LINSEED OIL. 181 Front Street, NEW YORK.



The Atlantic White Lead and Linseed Oil Co., Manufacturers of

White Lead (Atlantic), Red Lead, Litharge, Glass Makers' Litharge and Orange Mineral; LINSEED OIL,

Raw, Refined and Boiled. ROBERT COLCATE & CO., 287 Pearl St., NEW YORK.



R. Onderdonk. LEVER LEMON SQUEEZER, With Perforated Strainer 405 Grand St., NEW YORK.

Price \$12.00 iberal discount to the trade Send for Circular.

Manufactured by CLARK SINTZ, Springfield, Ohio.

HOWARD IRON WORKS,

BUFFALO, N. Y., Manufacturers of

Price Lists sent

| January 0, 1002. | |
|---|---|
| PHILADELPHIA. Corrected Weekly by Lloyd, Supples & Walton.) | 150 |
| Terms, 30 days. For 60 or 90 days, interest added at 10 per cent. per annum. | 5 |
| Anvils. Peter Wrights, * b | |
| Apple Parera | 8 |
| ## A xes. Hunt's Kentuckv and Yankeeper doz \$9.50 @ 10.02 Mann's Red Warrior | 2020 |
| | T |
| Augers and Augers Bits.—New List January I. Bates' Nut Augers | w |
| Henjamin Pierce Auger Bits | |
| Light and Commondis 15&10 \$ | |
| Bevin Bros. Mfg. Co. Light Hand Bellsdis 65&to \$ Swiss Pattern Hand Bellslow list dis 5&to \$ Conneil's Door Bevis | V |
| Chambers' No. 1. for % bolkeach, \$7.50
"No. 3, " \$4" | 1 |
| Borins Machines. Upright, without Augers List 5.50 dis 40 % Angular, without Augers 6,75 dis 40 % Boits Eastern Carriage Boits dis 80 % Philadelphia Staniey, Wrought Shutter dis 5020 5 | |
| Philadelphia | |
| Spofford | |
| American Mail | e i |
| ** Acorn. Loose Pin dis 4-210 \$ ** Mayer's Loose Joint dis 5-2210 \$ ** Mayer's Loose Joint dis 4-2210 \$ ** Mayer's Loose Joint dis 5-2210 \$ ** Mayer's Loose Loose dis 5-2210 \$ ** Mayer's Loose Loose dis 5-2210 \$ ** Mayer's Loose dis 6-2210 \$ ** Mayer's Loos | 0 |
| Mayer's Loose Joint dis 4-8:10 % | l |
| | 4 1 |
| Parker dis 70 % | 1 |
| Hutter s. German Haiter and Coll. new list Oct. 22, 1870. dis coxto 5 Galvanized Pump. p. 9/46 net | 2 2 3 |
| # B | 4 |
| Casters.—Bed (new list July 1, 1880,)dis 35270 % | 1 |
| Ceffee Mills.—Box and Side, new liss Jan. 1, 1880 | 10.00 |
| Cutlery.—Walden Pocket | Pare |
| Brawing Knives. Hart Mfg. Co. sdis 65&10 % | COP CO |
| Fry Pans. Tinned | 37 H 4 |
| Try Pans. Tined. 3 dos.\$3.50 4.00 4.50 5.00 5.50 6.50 7.50 9.00 10.00 No. 0 1 2 3 4 5 6 7 80 Burnished. 3 dos.\$3.00 3.75 4.24 4.75 5.25 0.00 7.00 8.80 9.00 Files. | 1 |
| Files. Nicholson | 1 1 1 |
| Nicholson | 1 |
| Fluting Machines. Eagle—35 in. roll | |
| Geneva Pluter Sad Iron V dos \$10.50 net | E II |
| Hammers. Yorkes & Plumb's, new listdis 30 % Handles. Boynton's Pat. Saw Handles35c per pair net. | 1 1 |
| Boynton's Pat. Saw Handles | 1 1 1 |
| llinges. | 1.1 |
| Ausable | the by Day of a |
| Strap and T | M M M M M |
| Discount on Ausable, 30%; Clinton, 20%; Globe, 10% Locks and Knobs. Branford | San |
| Cocks and Knobs Cocks and Knobs Cocks and Knobs Cocks and Knobs Cocks Cock | 1 1 |
| No 47 58 59 60 1 62 63 dla 60 8 9 dor | 11 11 51 |
| Square Candle and Oil | 55555 |
| Inwn Mowers.—Pennsylvania | 9 |
| Holiand PatentList \$5.00 dig to \$5 | 9999 |
| Mattocks. Long and Short Cutternew list | TANK KA |
| Pennsylvania Pattern | CKX T |
| Brass Liquor Cocks, new list Jan. 1 1888 dis 40 \$ Cork Lined | 11 |
| Cork Lined **Aleaf Cutter-dis sok no f Dixon's | to 9 |
| American. dis 25 % Stuffers dis 30 % dis 30 % dis 30 % dis 30 % | 900 |
| Scioto | A |
| Hanes | P |
| Stanley's Adjustabledis 652 10 % | ZZZZ |
| Pumps.—Bickford | ZZZZ |
| Hulles Stanley Boxwood Gls 05% % to \$ Stanley Vory Gls 55% to \$ Stanley Vory Gls 55% to \$ Steely ards Hart's Pattern Gls 56% to \$ Steely ards Hart's Pattern Gls 56% to \$ Sto \$ Sto \$ Sto \$ Lbs Gls 56% to \$ Sto \$ Sto \$ Lbs Gls 56% to \$ Sto \$ | n: |
| Charle and Iwon die so de full once die softer d | ZZZ |
| Try Squares, Stanleydis socio s
Dission's Try Squaresdis 40 s | N
19 |
| and Sharpened | 25 15 |
| Snarpsned # dos \$8.00 net
#8n wa Disston's Hand, Panel and Rip dis 20 st
Disston's Circular dis 40 st
Cross-Cut No. 7, Plain Tooth dis 40 st | 13 |
| Manuary | 19 |
| Billet Webs, 30 thoh, "dis 25 % Lightning Buck Saws, cross bardis 25 % | 16
81
31
21 |
| Hand, Panel and Ripdis 25 % | 21 |
| " Hand, Panel and Rip dis 25 % Bhovels and Spades. Oliver Ames & Sons, new list | |
| Hand, Panel and Rip dis 25 % Shovels and Spades. Oliver Ames & Sons, new list dis 15 % Orifiths dis 26 to 8 Rowland 40 to 10 s W h 3340 % Srd 1 rous - 40 to 10 s W h 3340 % Urs. Potts' Patent Gis 40 % tone, -Arkansas Oil Stone W h 32.00 net Washitz Extra 27 h 36 conet | 13 |
| Hand, Panel and Rip. dis 25 % | 13: |

| | 7 | 1 |
|-----------|---|-------------|
| | Serews. Gls 30 % Flat Hood Iron. Gls 30 % Flat Hood Iron. Gls 30 % Gls 20 | |
| - | Nound Head Brass Gla 20 5 From Gla 25 5 Spoons Gla 40 5 5 5 Plated Gla 40 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 | 34 |
| - | Spans | 73540 |
| | Chatnel(* No. 1, \$2.75; 2, \$3.25; 3, \$5.00 * dos, dis 33\2\5
Gem Corl No. 1, Large Jap'd \$\pi\$ dos \$4.00 \\ " No. 2, Medium Jap'd \$\frac{1}{2}\$ 25\\$10\5 \\ " No. 3, Small Jap'd \$\frac{1}{2}\$ 2.00 \\ \$1.00 Model of the core o | 0 |
| | Parker's dis 648.5 | 54.7 |
| | Show Nails—48, 0½C; 3½%, 100 % B. 10 % Double Pointed Tacks. dis 40%; 5 Fraps. Genuine Onelda—Newhouse. dis 30 % Im. Onelda—Newhouse list. first qual dis 50 % Im. Onelda—Newhouse list. first qual dis 50 % Im. Onelda—Newhouse list. first qual | 3 |
| | | 2 |
| | Mail. Bar | 2 |
| | Wire, Bright or Ann'd, No. o to 18 | MIN. II |
| | Valvanized No. 7 to 18 | I |
| | Novelty, No. 10. | 2000 |
| St. 20 20 | PITTSBURGH. Merchant Iron. | 7 |
| - | TERMS Note or acceptance at 50 days, with current
rate of exchange on New York, or a discount of 2 per
cent. for cash, if remitted within 10 days from date of
invoice. | 1 |
| Samuel . | For fluctuations and discounts
on card rates see weekly Pitts- | 1 |
| M W W W | burgh Trade Report. The following are card rates. Flat Bar. 11/4 to 4 by 1/4 to 1 inch | 1 |
| Same. | 1½ to 4 by 3½ to 1 Inch | 2 210 |
| | 76, % and % by % to % lace | 1 |
| 1 | 78, 8 and 78 of 78 to 78 | 1 1 1 1 |
| 1 5 5 | 74 to 114 | 1 |
| 2 % | Half Oval and Half Round. 5 to 14 inch | 1 |
| - | Wagon Box Iron, 74 Inch, Nos. 13 and 14 | 2 40 |
| 22 | 15 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 200.00 |
| o M O M | 1 to 1% by 4 and 5-16 " 2.7C
8 to 36 by 4 and 5-16 " 2.8C | - |
| N N | 9a and 3a by 34 and 5-18 114 to 6 by 14 to 3-16 114 to 6 by Nos. 11 and 12. 115 to 6 by Nos. 11 and 12. 115 to 146 by 15 to 3-16. 11 to 146 by 16 to 3-16. 12 and 13-16 by 16 to 3-16. 13 and 13-16 by 16 to 3-16. 14 and 11-16 by 16 to 3-16. 15 and 13-16 by 16 to 3-16. 15 and 11-16 by Nos. 11 and 12. 15 and 11-16 by Nos. 11 and 12. 15 and 11-16 by Nos. 11 and 12. 15 and 15 by 16 to 3-16. 16 and 16 by 16 to 3-16. 17 and 17 by 18 and 3-16. 18 and 18 by | |
| 225 | 74 and 13-16 by 16 to 3-16 | 1 |
| × × | \$6 and 6-16 by \$6 to 316. 4.00 \$6 and 6-16 by Nos. Hand 12. 4.10 \$6 inch by \$6 and 3-16. 4.50 \$6 inch by Nos. Hand 12. 4.30 \$76 inch by Nos. Hand 12. 4.30 \$76 inch by Nos. Hand 12. 4.30 | - 70 mm |
| Ties of | 154 to 2, Nos. 16, 17 and 18 | 1 |
| | 15-16, 1, and 156, Nos. 13, 14 and 15 | 1 |
| 5 5 | 19-16, 1, and 19 ₆ , Nos. 16, 17 and 18. 3-6c
19-16, 1, and 19 ₆ , Nos. 19, and 20. 3-7c
19-16, 1, and 19 ₆ , Nos. 21. 3-6c
19-16, 1, and 19 ₆ , Nos. 22. 3-6c
19 ₆ , Nos. 19, 14 and 18. 3-7c
19 ₆ , Nos. 10, 17 and 18. 3-7c
19 ₆ , Nos. 10, 17 and 18. 3-7c | |
| 30 | 15-15, 1, and 13s. No. 22 Sec. | 1 |
| 78 8 6 | 13-16, NO. 21 4-10
13-16, NO. 22 4-20
54, NOS. 13, 14 and 15, 4-30
54, NOS. 10, 17 and 18 4-50 | 1 |
| Shh | 15 16, No. 21 | i |
| | 11-16, Nos. 19 and 20 | 1 |
| å | 11-16, No. 22. 4-50 96, Nos. 13, 14 and 15. 40 96, Nos. 19, 17 and 18. 4-40 96, Nos. 19, 17 and 20. 4-50 96, Nos. 19 and 20. 4-50 96, No. 21. 4-70 96, No. 22. 4-70 96, No. 23. 4-80 | |
| t | 9-16, Nos. 13, 14 and 15 4-90
9-16, Nos. 16, 17 and 18 4-60
9-16, Nos. 19 and 20 4-70 | 1 |
| - | 6-16, NO. 22 | 1223 |
| - | 9-16, No. 30. (inch, Nos. 13, 14 and 15. (inch, Nos. 16, 17 and 18. (see 15. (inch, Nos. 16, 17 and 18. (see 15. (inch, Nos. 19, 14 and 15. (inch, Nos. 19, 15 and 15. (inch, Nos. 19, 16 and 15. (inch, Nos. 19, 17 and 18. (inch, Nos. 19, 17 and | 300 |
| | The prices under Hoop Iron do not apply to Cotton
Ites. 1:co per lb. extra will be charged for each gauge
lighter than the lightest indirated. 1:co per lb. extra will be charged for cutting floops
to specified lengths. | |
| | to specified lengths. **Barrel Hoops.** 1/4 to 2 in., cut to length. o to 11 lbs, per set of 6 hoops | 3 3 3 |
| | All Iron, including Tire | 33 |
| | No. 9 and heavier | 1 1 1 1 1 1 |
| | No. 10 to 14 | |
| | No. 27 4-70 6.00 7-50 No. 28 4-10 6.00 7-50 No. 28 4-10 6.00 7-70 No. 28 4-10 6.00 8.10 No. 18 and lighter over 8.10 8.10 | |
| | Wood's Patent Planished Sheet. | |
| - | Galcunised C. H. B. —Charcoal Hammered Blooms. Nos. 14 to 20 120 No. 27 150 Nos. 28 to 20 120 No. 28 150 Nos. 25 and 26 140 No. 29 160 Nos. 25 and 26 140 No. 29 160 Current discount, 26 \$\frac{1}{2}\$ \$\times\$ \$\times\$ \$\times\$ \$\frac{1}{2}\$ \$\times\$ \$\times\$ \$\frac{1}{2}\$ \$\times\$ \$\times\$ \$\times\$ \$\frac{1}{2}\$ \$\times\$ \$\tim | |
| | 3.50 1 by 56 by 516 | |
| | 340 | |
| | 8 lbs. to the yard | |
| | 11½ by \$4 | |
| | Fat Rails Punched and Countersunk. 1½ o 2 by ½ to 8½ inch. 3.00 1 o 9 ½ and 7-16 inch. 3.20 1½ by 1½, 7-16 and 1½ inch. 3.50 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, | |
| | Norway Guard Iron, 1623/43/6 and 1623/628/6 8.00 Guard Iron, 1623/43/6 and 1623/628/6 4.00 | |
| 1 | Drag Bars 330 Cvilinder and Landside Iron 3-83 | |

| F | HE IRON AGE | ĵ |
|----------------------|---|---|
| « | Nails. | ĺ |
| 200 | See Pittsburgh Trade Report. Best Quality Refined Cast Steel. | l |
| 8 | Best Quality Refined Cast Steel Square, Fial, Octagon and Round % to 2 inches, inclusive 110 516 and 3% to 2 inches 120 4 4 3 50 4 3 50 4 3 50 516 | l |
| MAN | 5-16 and 2½ to 3 inches | |
| MMM | 3-16 and 5% to 6 " | |
| 76 76 | Oil Well Steel Forgings. 290 | |
| % | Bessemer & | ı |
| × × | Round 616c se | I |
| et | 5-10 and 256 to 3 inches 7%c 6c 5c 54 and 356 to 6 4 856c 7c | l |
| 7. 7. | 8quare, Flat and Octagon, 16c extra throughout the | l |
| NA | list. Cut to specified lengths, 1/4c extra. | l |
| N 16. N | Hamman Clast Ct - 1 | l |
| 5 | 2 inches and under | l |
| N N | Best. 2d Qual. 3d Qual. Open Hearth. | l |
| 2 | To 21 gauge 116 oc 7/9c oc
1c. extra for each additional gauge.
Cut to multiples or specified lengths, %c. extra. | l |
| 20 | | ļ |
| 8 | Auger and Auger Bit. | ١ |
| | Side Bars | Į |
| | Skate Steel | ĺ |
| | Pike and Cant Hook | ١ |
| | Spindle, subject to Machinery classification | I |
| | Forged Crank Pins and Lathe Spindles | |
| nt | Section Sect | |
| of | Boller Fire-Box and Flue Shares | 1 |
| ts | Boiler, Fire-Box and Flue Shoots 0%C | 1 |
| 4- | | l |
| | stelvsmk ordered separ- Smoke Stack, to shapesc Locomotive Tank Steelsc | l |
| 5e
6e | File Cast Steel, Square, Round, Half Round and West Restand | l |
| .00
.60 | File Cast Steel. Square, Round, Half Round and Fint Bastard, 8- inch and over | l |
| 70
.9e | Horse and Shoe Rasp | I |
| 70
90 | Spiral and Taper, cut to lengths. | |
| 30
50 | Tire Cast Steel. | ۱ |
| 90 | 1x3/4 and over | I |
| 30
70 | Agricultural Implement Cast Steel. | Ì |
| .00 | Agricultural Implement Cast Steel. Fork and Rake, Crucible. Hore Rake Steel, cut to lengths, Crucible. 76 Hore Rake Steel, cut to lengths, Crucible. 76 Corn Stalk Cutter, beveled. 76 Corn Stalk Cutter, beveled. 76 Crucible Flow Steel in slabs. 56 | ł |
| 50 | Corn Stalk Cutter, beveled | I |
| -50 | Bessemer and Open Hearth. | I |
| 70
50
.00 | Bessemer and Open Hearth. spiral and taper, cut to lengths. "spiral and taper. "to Caik "to Ca | 1 |
| 1C | Toe Caik | l |
| .re | Sleigh Shoe | ١ |
| .70
.80
.00 | Scythe Back Steel | 1 |
| | Rolling Coulter Blanks, cut and punched | |
| 10 | Rolled Hammer Billets | 1 |
| .2C | if remitted within 30 days. | I |
| -50
-70
-80 | Rolls and Castings 25/60 | l |
| .00 | Guide Plates | I |
| 30
40 | Sand Rolls and Pinions, large size | l |
| -30
-40 | Rolling Mill Castings under 50 lbs | 1 |
| 50
60
70 | Pulleys up to 30 inches small | |
| 8e
5e
6e | Pulleys up to 30 inches 450 over 50 inches 450 Engine Castings, light 45c After Oct. 1, 1881, no discounts will be made at set tlement as hereofore, prices quoted being net. | |
| .70
.80 | tlement as heretofore, prices quoted being net. | |
| 90
70
80 | Chilled Rolls. | 1 |
| 90 | Chilled Rolls. 6 to 7 in. diam., 7 to 20 in. long. 8 to 15 in. 8 to 40 in. 950 35 to 24 in. 15 to 72 in. 950 14 to 31 in. 73 to 108 in. 450 White and Red Lond. | I |
| 90 | White and Red Lead. Strictly Pure White Lead in Oil, in been in the | |
| 10 | B Tin Palls, 16c. W B over keg price; 1316 B Tin Palls, 1c W B over keg price; assorted, 1 to 5 B cans | 1 |
| 30 | Dry White Lead Red Lead. very brilliant. in keep | I |
| 30 | Strictly Pure White Load in Oil, in kegs, 7c.: in 25 m Tin Falls, 5c. \$\pi\$ ow Oil, in kegs, 7c.: in 25 m Tin Falls, 5c. \$\pi\$ ow Oil, in kegs, 7c.: in 25 p Ails, 1c \$\pi\$ own keg price; 1256 m Tin 3c. per \$\pi\$ over keg price; assoried, 1 to 5 b cans, 3c. per \$\pi\$ over keg price; assoried, 1 to 5 b cans, 3c. which Lead. Try White Load. CRed Lead, very brilliant, in kegs, 7c; in barrels of \$\pi\$ climars, 7c: \$\pi\$ of \$\pi\$ cans, \$\pi\$ of \$\pi\$ of \$\pi\$ cans, \$\pi\$ cans, \$\pi\$ of \$\pi\$ cans, \$\pi\$ of \$\pi\$ cans, \$\pi\$ cans, \$\pi\$ cans, \$\pi\$ of \$\pi\$ cans, \$\pi\$ | I |
| 4C
2C
3C | Terms: Note at sixty days, or if paid within 14 days from date of invoice, a discount of 2% per sent, will be allowed, but not otherwise. | ı |
| 10
50
60 | Window Gloss | 1 |
| 40 | Per Box of to Feet.—Discount, in small lols, box 10 % on
single strength, box 20 % on double; in car loads, box 10
&5% on single strength, 70% on double. | |
| 50
60
70
80 | Single Strength. | 1 |
| 98
6e | Size. AA. A. B. C. | ١ |
| 70
80 | 5 x 8 to 10 x 15 | ١ |
| 00 | 15 X 36 to 24 X 36 | I |
| 8c | 20 X 30 to 30 X 44 | 1 |
| 10
20
30 | 90 x 56 to 34 x 56 | ١ |
| 4C
on | 30 A 00 tO 30 A 00 | 1 |
| ge | 12.75 11.75 10.00 11 X 14 to 16 X 24 1. 14 49 13.25 12.50 11.25 18 X 22 80 20 X 50 17.25 12.50 17.25 14.00 | |
| рв | 15 X 36 to 24 X 30 | |
| se l | 26 X 46 tO 30 X 50 | |
| 6c
8c | 30 X 50 tO 34 X 90 27.75 25.00 21.75 | |
| oc | 36 x 60 to 40 x 60. 33.45 30.00 27.75 An additional to per cent, will be charged for all class more than to be the wide. All sizes above | |

| An additional so per cent, will be charged for all glass more than 40 inches wide. All sizes above 13 meches in length and not making more than 81 united inches, will be charged in the 84 united inches bracket. |
|--|
| CONTRACTOR AND CONTRA |
| |

TISCHER'S JACK.



From 5 to 30 Tons. No Repairs, Packing or Alcohol. NEVER RUNS DOWN UNDER THE LOAD. Handier, stronger, longer lived and cheaper than any hydraulic jack. GEO. A. OHL & CO.,

THE TRENTON ANVIL.



SOLID WROUGHT IRON, STEEL FACE (P. W. Pattern), WARRANTED.

Particular attention is given to the manufacture of all kinds of Anvils when draw ings are furnished.

HERMANN BOKER & CO.,

101 and 103 DUANE STREET, NEW YORK.

With Jacobs' Patent Wheel.



Full sized, bent tray, planed and well finished. Bolted securely to frame. The legs extend upward, serving as a brace to the bowl, to which they are botted; they are also botted to handles. This Barrow has the Jacobs Patent Wheel, superior in every way to any iron wheel manufactured. The wheel revolves on a fixed axle bolt, similar to a buggy wheel. The axle bolt bolts the barrow firmly together. The barrow for Railroad Contractors. Will outwear any other made, and displaces all others wherever introduced. Wheel painted. We also manufacture a full line of

ORE, BRICK, STONE and CARDEN BARROWS.

Road Scrapers, Road Plows, Levelers, &c. KILBOURNE & JACOBS MFG. CO.,

COLUMBUS,



NEW YORK STAMPING CO., 311 & 313 Avenue A, NEW YORK. Manufacturers of

Patent Corrugated Bottom Coal Hods, PATENT ACME FRY PAN Edgar's Patent "Gem," "Victor," "U. S," "Climax" and " O. K." Stove Shovels.

POLISHED FRY PANS, &c. Sen I for Catalogue.

MOUND CITY BARBED FENCE CO.,

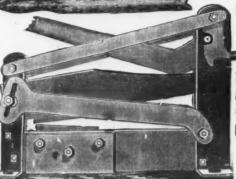
(LICENSED UNDER ALL BARBED WIRE PATENTS.) Manufacturers of

FOUR-POINTED BARBED WIRE FENCING.



CABLES AND BARBS, WARRANTED ALL STEEL.
OFFICE AND FACTORY, Cor. PAPIN and 21st Sts., (Near the Harrison Wire Mil.s.), ST. LOUIS, Mro.

PATENT WROUGHT IRON SHEAR,



PUNCH ATTACHMENT, FOR IRON AND STEEL.

CLEVELAND HARDWARE CO.

Manufacturers of STERLING ANTI-FRICTION BARN-DOOR HANGERS. nd for Illustrated Circular.

PHILADELPHIA BLACK LEAD CRUCIBLE WORKS. 1324 to 1334 Callowhill St., Philadelphia, Pa.

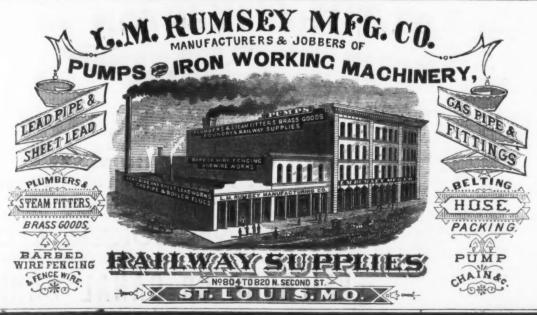






R. B. SEIDEL, Manufacturer of SUPERIOR BLACK LEAD CRUCIBLES.
For melting Steel, Brass and other metals. Black Lead Stopper, &c., for Bessemer Steel makers Also manufacturer of superior quality Hammered Charcoal Iron of different sizes and shapes.

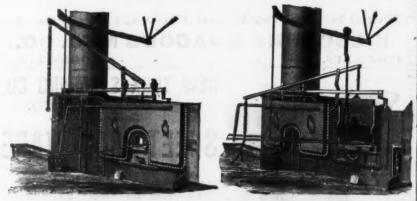
-ALEXANDER BROS



BOLT CO., Lowell, Mass.,

Bolts, Nuts, Washers, Chain Links, Car Bolts, Bridge Bolts, Lag Screws, &c.

McDONALD'S



For Protecting the Men from Heat when Working in Front of Puddling, Heating and other Furnaces.

McDONALD, Patentee,

MANAGER SLIGO ROLLING MILLS,

PITTSBURGH, PA.

ELECTRIC LIGHT



THE FULLER ELECTRICAL COMPANY, having perfected their system of Electric Lighting, are prepared to furnish the Improved Gramme Dynamo Electric Machines and Electric Lamps, either for single lights or for from 2 to 20 lights in one circuit.

This apparatus is unexcelled for durability, steadiness of light and economy of power, d requires less attention than any other.

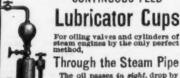
For price list and further particulars apply to THE FULLER ELECTRICAL COMPANY, 44 East Fourteenth Street, NEW YORK.

STATIONARY AND PORTABLE STEAM ENGINES Shafting, Hangers, Pulleys and Gearing.

SAW MILLS, Hoisting Engines and Mining Machinery.

LANE & BODLEY CO., John and Water Streets,

THE DETROIT LUBRICATOR MFG. CO.'S CONTINUOUS FEED



The oil passes in sight, drop by drop, into the column of steam where it vaporises, thus becoming a steam servicent, oilly fee team.

Any clean oil, black or white, light or heavy, may be used. Save steam of the column of the

DETROIT LUBRICATOR MFG. CO., Office, 98 Griswold St., Detroit, Mich. First Prises at Fair American Institute and Millers International Exposition, Cincinnail, 1880.



HILDEBRAND PUMP AND TANK Economical, saves all the oil, reduces insurance. The best arrangement extant. Can be used in barrel as readily as in tank. No measure or funnel used. THE YOUNGSTOWN

YOUNGSTOWN, O. ery Pump guaran

Flanders Radius Planer.



For pianing Links, Blocks and circular work on relinary planer. Price and descriptive circular on application.

L. B. FLANDERS MACHINE WORKS. 1025 Hamilton St., Philadelphia, Pa.

Mellert Foundry & Machine Co., (Works Established at Reading, Pa., in 1848.)
Manufacturers of

Second and Chestnut Sts., Reading, Pa., and 74 Pine Street. New York City.

BUFFALO SCALE CO., BUFFALO, N. Y., Manufacturers of

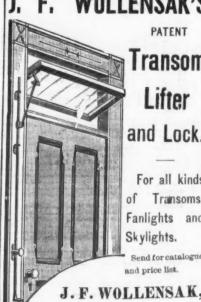
R. R. Track Scales, Hay Scales, Coal Scales, Grain Scales, Platform Scales, Counter Scales, &c. Send for price list, stating what you want.

WANTED-10,000 MECHANICS

To send Five cents each for sample of the Rolling Mill Crayons and Mechanics' Companion The haudiest and cheapest marker for any kind of surface. Makes a white mark. Convenient and nice to work with or to carry in the pocket. Sent postpaid on receipt of 5 cents.

CINCINNATI, OHIO, U. S. A. D. M. STEWARD, Sole Manufacturer, 931 State Avenue, Cincinnati, Ohio. | Craw-Bars.—Cast Steel....

J. F. WOLLENSAK'S



Iransom Lifter and Lock.

For all kinds of Transoms, Fanlights and Skylights.

J. F. WOLLENSAK, Patentee and Sole Manufacturer,

CHICAGO, ILL.

THE DUPLEX INJECTOR.



JAMES JENKS,

16 & 18 Atwater St., East, DETROIT, MICH.

nvile .- "Eagle American "..... \$ % 94c dis 20 5 Ax Handles.—
Oak Extra, 31 in., No. A.
Oak Extra, 34 in., No. A.
Oak Extra, 31 in., No. B.
Oak Extra, 31 in., No. B.
Oak Extra, 34 in., No. B.
Oak Extra, 31 or 34 in.,

Bird Cages.

Japanned M. B. & D., reduced list, 1879.

Brass M. B. & D., reduced list, 1879.

Blind Fasts.

Vente Fasts.

Vente Fasts.

Blind Ilinges.—Mall, Hook, 3 holes. Brad Awl Handles. --Phœnix Adjustable. . . . Bolts.—Norway Iron Carriage Common Iron Carriage..... Borax.-Refined ... Boring Machines.

Eagle Upright each.

Eagle Angle each...

Snell Augers...... 85.50 Hat } dis 40&10 \$ Braces.—Barber's... Spofford's.... Backus' Hackus Hracket Sa.ws. Holly Scroll Saw.
Demas Lathe and Scroll Saw.
Bracket Saws, extra quality, to No. 5.
Steel Frame, with patterns.
Lester.
New Hogers, all Iron. Bracket Saw Blades.—Griffith's pat.... # gross 750 H. B. & M. Flower Pot, reduced list.... Bronsed Shelf, M. B. & D., new list..... Butts. - Union Fast Joint...... Union Loose Joint..... Carriage Bolts. - Eagle Norway. .dis 70&5 %

Carriage Jacks. - Climax No. 1. Cartridges .- U. S. Cartridge Co. . Casters.—Bed and Table
Chain.—Traces 6½, 10, 4, straight.
Traces 6½, 10, 4, twisted.
Traces 7, 12, 2, twisted.
Coil 3-16. ..dis 45 % COI 1/6.
Chalk.—White, Carpenter's.
Red, Carpenter's.
Blue, Carpenter's.
Chisels.—Hart, Bliven& Mead, Framing.
Underhill, Framing.
Buck's Chisels. Clothes Line .- Galvanized Wire, roo feet each .. Coal Hode, "Dover." Galvanized, No. Coffee Mills.—New List...... Copper Rivets..... dis 33% (10) Cow Ties.

No. 30, 3 ft. No. 6 Wire, with toggle.
No. 30, 3 ft. No. 6 Wire, with snap.
No. 40, 36 feet No. 6 Wire, with snap.
No. 45, 36 ft. No. 6 Wire, with toggle.
No. 55, 4 ft. No. 4 Wire, with toggle.
No. 55, 4 ft. No. 3 Wire, with snap.
Cocks.—Brass, L. F. & Co.

Cutlery.—Pocket, American Shear Co.'s..
Butcher Knives, Wood's, Lap Bolster,
Square Handle.
Steak Knives.
Lap Bolster, Oval Handle.
Sticking.
Skinking.
Skinking.
Skinking.
Skinking.
Skinking. Dividers.-Cook's Dog Collars...
Dog Muzzles,—Automatic...
Door Springs.—Torrey's Rod...
Imitation Torrey's Rod...
Gem Coll, new fist
Crown...
Warner's. Door Stops -Thurston's. Drawer Knobs.—Thurston's Drills.—Morse Bitt Stock. Morse Straight Shank. Emery.—Wellington Mills. Walpole Emery Mills.... Turkish in 10 B cans.... Enameled Ware.—
Standard Mfg. Co. Kettles.
Standard Sauce Pans...

Felloe Pintes.—Wrought. Files.—American File Co... Fluting Machines, -Knox list, 84 American list, 83 40 Forks.-W. C. & Co., Manure Glass Cutters.—Combination Glass Cutter and Knife Sharpener ... # dos \$1.00 Grub Hoes.—K. P. & Co.'s No. 2, \$11.50 \(\psi\) doz.dis 35 \(\psi\) Hammers.—Maydole's. Hartford Hammer Co... Hangers & Rollers, -Anti-Friction Hand Screws. Hatchets.—C. F. Dowse new list. Underhill. Hay Knives.—Lightning...... Fisher's Patent.... ... dos.\$18.00, net Hooks and Staples,—Brewers' (new list)...dis 65 %

Hoes.-W. C. & Co.'s. No. 6, 23; No. 7, 21; No. 8, 20; No. 5, Ice Cream Freezers.—Packer's, nev Knobs.—"Norwalk." New list.... Silver Glass Bell Pullsdis 40 %.dis 50&10 %.dis 50&10 % Lawn Mowers .- The "Daisy." Locks.—Norwalk Genuine Bronze Goods. Eagle Cabinet Eagle Trunk W. Wilcox & Co., Padlocks. Manure Forks.-W. C. & Co. dis 40 % Measuring Tapes,-Eddy's. P dos \$22.5 Mouse Traps.—Delusion. Novelty.

English Iros.
Bailey*
Plated Ware.—Rogers & Bro.
Piters.—Vom Cleff & Co.'s.
Button's Wire Piters.—Sanglon S. & L.
Focket In The Committee of the Co. of th Iron Clatern... Iron Pitcher Spout...

Skates, Union dis Acme dis Acm

Howard vise Co.

Prentises:

Weather Stripse-Packer's.

Browne's Flexible Rubber.

In 25 feet boxes: No. 1, ½ in. wide, ♥ yard.

2, ½ in., 15c; No. 5, ½ in., 5oc.; No. 4, 1 in.

Black Wainut Spring Weather Strips... ♥

Wide Springs... ♥

Babcock's No. 4

Wire Cloth-"Clinton"

Wire Fence. Scutt's Patent, Painted.

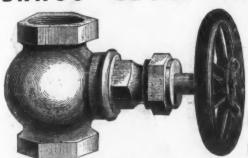
Scutt's Patent, Galvanized.

Wire Goods.—Gate Hooks and Eyes, &c. list. Wrenches.—A. G. Coe's... Girard Mfg. Co... Girard Agi.

Girard Ag.
Wringers.— Universal, No. 2½.
Novelw, No. 2.
Excelsior, No. 6.
Excelsior, No. B.
Excelsior, No. CC.
Novelty Set Tub, E.
Eureka
Reystone, Wood Frame No. 1½.
Keystone, Iron Frame No. 2½.

McNab & Harlin Mfg. Co.,

COCKS BRASS



For STEAM, WATER and GAS WROUGHT IRON PIPE AND FITTINGS

PLUMBERS' MATERIALS 56 John Street, N. Y.

Factory, Paterson, N. J. BLACK AND TINNED IRON RIVETS.



HENRY B. NEWHALL, 105 Chambers St ..

PITTSBURGH, PA., urers of every description of First Quality

New York Agent. RIVETS



WM. H. HASKELL & CO.,

Pawtucket, R. I.



(With Gimlet Points), ALL KINDS OF

Machine and Plow Bolts,

TAP BOLTS. 105 Chambers St., New York Agent

HENRY B. NEWHALL,

STANDARD NUT CO.,

Pittsburgh, Pa.,

MANUFACTURERS OF

HOT PRESSED Square & Hexagon Nuts,

R. R. FISH BARS. BOLTS.

HENRY B. NEWHALL. 105 Chambers St., New York Agent.

SPIKES,

RIVETS, &c.

"STAR" Philadelphia

NORWAY IRON

FANCY HEAD BOLTS.

Carriage & Tire Bolts. V Star Axle Clips, &c. TOWNSEND, WILSON & HUBBARD, 2301 Cherry Street, Philadelphia, Pa

MACHINE, PATCH AND STAY BOLTS. Cold S Н T E R

S WOOD SUREWS, TANK RIVETS, FLAT LINK CHAIN

BAGNALL & LOUD. BOSTON, MASS.,

Sole Manufacturers in U. S. A. of our Cele

METALINE AND

Star Roller Bush Tackle Blocks.

New York Warehouse. 33 South St.



LIGHTNING

WEYMOUTH'S PATENT.



and stack, cutting fine feed from bale, cutting corn stalks for feed, cutting peat and ditching marshes.

The blade is best cast steel, spring temper, easily sharpened, and is giving universal satisfaction. A few moments' trial will show its merits, and parties once using it are unwilling to do without it. Its sales are fast increasing for exports as well as home trade, and it seems destined to take the place of all other Hay Knives.

They are nicely packed in boxes, one dozen each of 50 pounds weight, suitable for shipping by land or water to any part of the world.

MANUFACTURED ONLY BY

HIRAM HOLT & CO.,

East Wilton, Franklin Co., Maine.

For sale by the Hardware Trade generally.

NORWAY IRON CARRIAGE & TIRE BOLTS. Axle Clips, &c.



COLEMAN EAGLE BOLT WORKS, WELSH & LEA, Philadelphia, Pa.



Carriage, Machine and Skein Bolts, Lag Screws, &c. ALLEGHENY, PA.

W. K. ROSS, J. A. FULLER, W. K. FULLER, Sole Agents, 97 Chambers Street, New York.

RIEHLE BROTHERS'

Celebrated Patented Furnace Charging Scale.



and always preferred by experienced furnacemen Ask any furnaceman. Send for Circulars and Prices. RIEHLE BROS..

Works, oth above Master. | PHILADEL'A. Send for prices of Scales and Testing Ma kinds. Tests of material made daily.

W. C. WREN'S PATENT GRATE BAR.

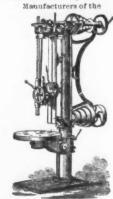


DAVID S. CRESWELL, Manufacturer, 816 Race Street,

The most durable Grate Bar on the market Send for circular and price lis

PHILADELPHIA, PA.

P. BLAISDELL & CO., WORCESTER, MASS



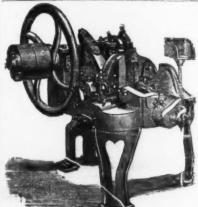
BLAISDELL" UPRIGHT DRILLS And other First-Class Machinists' Tools.



143 Market Street, PHILADELPHIA, PA. HOLT

PORTABLE FORGES HOLT MFG. CO. Cleveland, Ohio.

New York Warerooms 79 & 81 Reade St. F. PORTER THAYER, Manager.



PITTSBURGH MFG. CO. Manufacturers of Nail and Spike Machines, Boite, Nuts, Washers, Rivets, &c. Castings, Forgus a and Blacksmith Work promptly attended to.

OFFICE & WORKS, Railroad St. near 28th., Pittaburgh, Pi

THE LA FRANCE FIRE ENGINE CO.



Rotary Steam Fire Engines ELMIRA, N. Y.



The best Wood and Metal Faucet yet made Never leaks, splits or shrinks. Is as durable a the brass stop-cock and is much cheaper. I not poison the liquids. It is especially led for Export, as it is not affected by

U. BOHREN & CO., Manufacturers, 259 West 27th Street, New York. Send for Circular and Price List.

JOHN H. WRIGHT,

MACHINISTS' TOOLS

WOOD, LIGHT & CO.'S PATTERNS

Of Lathes and Planers.

Mr. Wright having formerly been a contractor in building the same, will give superior work to all who fazor him with their orders.

Cear Cutting a Specialty.

237 Water Street,

BRIDGEPORT, CONN.

PORTABLE Passenger and Freight AND ALL RINDS OF Steam, Hydraulic, **Hoisting Machinery** and Belt Power A SPECIALTY. ELEVATORS

FURNACE

For Handling Stock to Top of Stack with One or Two Platforms. STOKES & PARRISH, 3001 Chestnut St., Philadelphia

SSS SAVED SSS

NINETEEN HUNDRED SEVENTY-SEVEN

BOTH NEW AND SECOND-HAND COMPRISING MACHINE AND BLACKSMITH

TOOLS OF EVERY DESCRIPTION.

WOOD-WORKING MACHINERY IN ALL ITS

BRANCHES. PORTABLE ENGINES. UPRIGHT and HORIZONTAL STATIONA
300 HORSE POWER.

BOX, HORIZONTAL,

FIRST LTO 100 HORSE POWER.

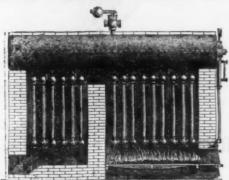
WATER WHEELS COT-BOX, HORIZONTAL, O.U.I. MOUSE and UPRICHT BY
ERS, I TO 100 HORSE POWER. WATER WHEELS, COTTON AND WOOLEN MACHINERY, STEAM
PUMPS, GRISTMILL MACHINERY,
Etc., FULLY DESCRIBED, AND
PRICES ANNEXED,
Istating what you we

send stamp for same,] [stating what you want. Ta We have the Largest Assortment of Machinery to be

found in the hands of any firm in the country. Works and Main Office, N. H. S. C. FORSAITH & CO.

Branch Office and Wareroom, 209 Center street, New York City.

DUPLEX BOILER SAFETY



Unequalled Economy.

Positive circulation, insuring un der all circumstances a clean boiler. No sediment. The best materials. No joints, but expanded joints in combustion chamber.

The most durable boiler made Send for circular.

DUPLEX SAFETY BOILER CO.,

34 Cortlandt Street,

NEW YORK.

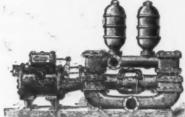
Chicago Office 45 Franklin Street.



Patent Felt and Asbestos Non-Conducting Removable Covering. For steam boilers and pipes, het and cold water pipes, refrigerators, meat cans, ice hor Samples and circulars on application.

THE CHALMERS-SPENCE CO., Sole Proprietors, 10 Cortlandt St., N. Y. Also Patent "Air Space," Non-conducting Cements, Hair Felt, the National Steel Tube Cleaner

KEYSTONE STEAM PUMP WORKS



PUMPING MACHINERY Of all Kinds.

THOMPSON, EPPING & CARPENTER,

PITTSBURCH, PA. GEO. J. MUNSCHAUER. MICHAEL J. STARK. ADAM HEINZ.

NIAGARA STAMPING & TOOL CO., Presses, Dies and Tools for Working Sheet Metal, FRUIT CAN AND TINNERS' TOOLS, &c.

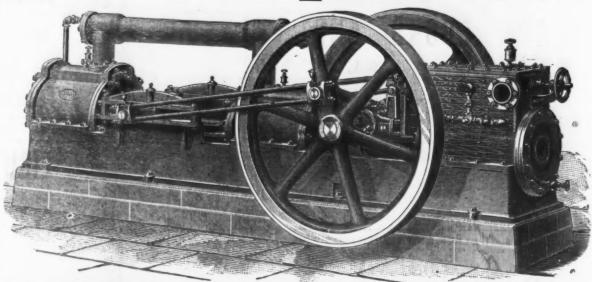
Works, 147 and 149 Elm Street, near Clinton Street, BUFFALO, N. Y. THORNE, DeHAVEN & CO., Drilling Machines,

21st Street, above Market, Philadelphia.

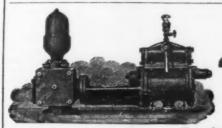
PORTABLE DRILLS. Driven by power in any direction.
RADIAL DRILLS. Self-feed—Large Adjustable Box Table,
VENTICAL DRILLS. Self-feeding.
MULTIPLE DRILLS. 2 to 20 Spindles.
HORIZONTAL BORTING AND DRILLING MACHINES.
HAND DRILLS. CAR BOX DRILLS.
SPECIAL DRILLS, For Special Work.

BUILDERS'HARDWARE

Air Compressors.



THE NORWALK IRON WORKS CO., South Norwalk, Conn.



A. S. CAMERON'S

Is the Standard of Excellence at Home and Abroad.

For reduced price lists address A. S. CAMERON, East 23d Street, New York.

E. W. Bliss. BLISS & WILLIAMS, **PRESSES**



SPECIAL MACHINERY

WORKING SHEET METALS, &c. FRUIT & other CAN TOOLS.

GOLD MEDAL AWARDED



and DIES.

STEAM:

CHEAPEST

HOLF-GOTH

UPWARDS,

Plymouth, Pearl and John Streets, BROOKLYN, N. X U. S. A.

PARIS EXPOSITION, 1878.

SIZES

JOHN.H MSGOWAN&C PUN

MANNING, MAXWELL & MOORE, Sole Sales Agents for THE MORSE TWIST DRILL AND MACHINE CO.'S



111 Liberty Street,



NEW YORK.

THE MEDART PATENT WROUGHT RIM PULLEY.

Forty Per Cent. Lighter and 100 Per Cent. Stronger



than any cast pulley. No shrinkage strains; perfectly balanced for high speeds; better surface for belt, and THE BEST PULLEY IN THE MARKET.

We make these Pulleys from 12 inches to 6 feet diameter, 34-inch face, crowning or straight, split or whole, single or SEND FOR PRICE LIST.

Mill Gearing, Iron and Brass Castings, and Finished Fly Wheels. Hill, Clarke & Co., 36 Oliver St., Boston, M ss. The Hartford Engineering Co.,

HARTFORD, CONN. Sole licensed manufacturers for the New England, Middle and Atlantic

938 to 954 River St. & 67 to 83 Vall Ave., Trey, N. Y.,

Double and Single Gate, % in. to 48 in.—outside and inside Screws, Indicator, &c.

Also FIRE HYDRANTS.

for Gas, Water and Steam. Send for Circular.

Gear and Axie Grease. Also, Star Cylinder Oils. Samples sent free for trial upon application

VALVES.

WICKERSHAM & CO.,

Railway, Miners', Mill & Machinists' Supplies

W. & Co.'s Packing: Steam, Hydraulic and Locomotive. Sam-les sent free. Lubricants for Engines, Shafting, &c.; Rolling Mill. Railroad, ear and Avis Gream.

No. 309 Race Street, Philadelphia, Pa.

COCHRANE & CO., Agents, 93 Fourth Ave., Pittsburgh.

DIENELT & EISENHARDT, 1310 Howard St., Philadelphia.

DEAD-STROKE POWER HAMMERS



engine now in use at moderate expense, and will save from 30 to 50 per cent. in fuel over the plain slide valve and throttle governor. Also, Vertical, and Yacht Engines. NELSON W. TWISS, 25 Whitney Ave., New Haven, Conn.

CRANE BROTHERS MANF'G. CO.,

CHICAGO. MANUFACTURERS OF

WROUGHT IRON PIPE,

STEAM PUMPS, STEAM and GAS FITTINGS. Steam and Hydraulio

Freight and Passenger Elevators STEAM HOISTING ENGINES

for Furnaces, Mines, &c.

Stationary Steam Engines &c

Machinery, &c.

LYON'S HAND OR POWER PUNCHES AND SHEARS



For Round, Flat or Square Iron, Polishing & Buffing Machinery, HYDRAULIC JACKS.

To raise from 3 to 190 tons.
HYDRAULIC PRESSES, HYDRAULIC HAND & POWER PUMPS

E. LYON & CO., 470 B Grand Street, NEW YORK. Send for circular of what you wast.



THE MACKENZIE PATENT CUPOLA & BLOWER. Send for circular to

Smith & Sayre Mfg. Co.,

PROPRIETORS, 245 Broadway, New York.

This Cupola has made a great revolution in melting Iron. It differs from all others in having a continuous tuters, or in other words, the blast enters the fuel at all points. Above one ton capacity per hour, they are made out in form. This brings the blast to the center of the furnace with the least resistance and smallest possible amount of power, and in combination with the continuous Tuyers causes complete diffusion of the air throughout the furnace, and uniform temperature, melting tensor of first to the continuous flayers causes complete in an ordinary Cupola. It also enables us to save very largely in lane and interfly for to further the continuous flargely in lane and interfly for the continuous flargely in lane and interfly for the continuous flargely in lane and interfly of casting, and interfly for the complete flargely in light work. This is due to the thorough diffusion of the air and more perfect combustion, extracting less carbon from the iron, making a softer and tougher casting.

We manufacture these Cupolas of any desired capacity, numbered from 1 to 20, inclusive, the numbers indicating the melting capacities in ross from 100 flowers. The complete form 1 to 20, inclusive, the numbers indicating the melting capacities in ross from 100 flowers.





Working Without Boiler, Steam, Coal, Ashes or Attendance. rted Instantly by a Match, it gives Full

When Stopped, all Expense Ceases.

No explosions, no fires nor cinders, no gauges, no sumps, no engineer or other attendant while runing. Recommended by insurance companies.

UNSUPPASSED IN EVERY RESPECT for hoist-property of the companies of the companies of the companies of the companies. ing in warehouses, printing ventilating small shops, &c.
2. 4 and 7 H. P. and upwards. Built by

SCHLEICHER, SCHUMM & CO. Engineers and Machinia 3045 Chestnut Street, P

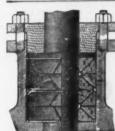
PUNCHING & SHEARING PRESSES.



DRILL PRESSES. DRILL PRESSES.

Power, Foot or Hand
Punches, and Shears; all
sizes, from \$25 to \$3,000.
Bar-Iron Shears, cut ½ x
3 in.; weight, 755 ibs., \$55;
New Upright Power Drills,
backs general, quisale return motion, swing 2s
in. with countershaft,
weight 900 lbs., price
\$195. Small size, drills
up to ½ in., lever feed,
swing 15 in. tight and loose

erless Punch and Shear Co., 15 W Liberty Street, NEW YORK CITY.



KATZENSTEIN'S Self-Acting Metal Packing, Piston flods, Valve Stems, &c.,

Of every description peted and in use by principal from the and Steamship npanies within the sight years in this light years in the

L. KATZENSTEIN & CO., 35 Desbrosses Nt., New York



ne in et. ar is ly

GS.

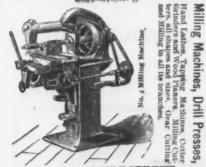
S

to

S ď Ш S œ

0 3

E. E. CARVIN & Manufacturers of



139-143 CENTRE STREET, Corneli's Building, NEW YORK,





f. F. ROGERS & CO., 107 Liberty Street, NEW YORK,

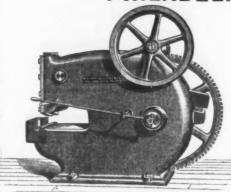


EMERY WHEELS AND EMERY GRINDERS Buffing and Polishing Lathes, Shafting, Countershafting, Pulleys, Hangers and Couplings. Lubr cators, Oil Cups. Brass, Tin and Maileable fron Oiler Engineers' Oiler Sets.



AND PORTABLE HOIST. Warranted double the power and not one half the price of other hoisters. As a proof of the above I will give them 30 days on trial. Send for catalogue and price list. Address, J. DUNN, 32 Bank Street, CLEVELAND, OHIO. Machinery, &c.

PHILADELPHIA.



Shearing Machine.

Manufacturers of

Iron & Steel Work ing Machinery, MACHINISTS' TOOLS, SHAFTING. GEARING, &c.,

INJECTORS.

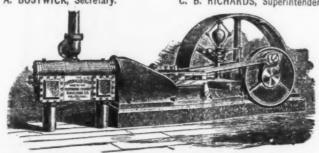
BRANCH OFFICE, 79 Liberty Street, New York.

THE

PORTER-ALLEN HIGH-SPEED STEAM ENGINE

W. H. MERRICK, Pres. and Treas. G. A. BOSTWICK, Secretary.

C. B. RICHARDS, Superintendent.



Belts and gearing dispensed with for any speed up to 600 revolutions per minute. Especially dapted to Rolling Mill work, Factories and Electric Light Machines.

Having extensive foundry facilities, the company are prepared to contract for

IRON AND BRASS CASTINGS.

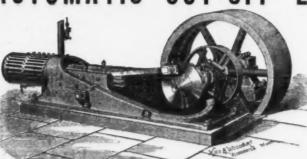
With largely increased facilities we are prepared to fill all orders for the Porter-Allen High-Spe Engine on contract time. Prices and terms will be furnished on application. Business communications, to receive prompt attention, must be addressed to the company.

THE SOUTHWARK FOUNDRY AND MACHINE CO. 430 Washington Avenue, Philadelphia.

EDWIN F. MORSE. CLEM & MORSE,

Hoisting Machinery, Automatic Hatch Doors, &c. 413 Cherry St., Philadelphia, Pa. Branch Office, 108 Liberty St., New York.

THE HARTFORD



Built for Heavy and Continuous Work, and adapt ed to Any Required Speed, with Close Reg-ulation and best attainable Econ. omy of Fuel. Circular and Prac tical Treatise or Steam Engineering sent on application

LATEST

THE HARTFORD ENGINEERING COMPANY HARTFORD, CONN.

NEW YORK OFFICE,

ROOMS 72 and 73, ASTOR HOUSE

Solid Drawn Steel Tubes WITHOUT A WELD.

Suitable for Hydraulic Work, Boring Rods, Sockets, Axles, Collars, Bushings, Ferrul-s, Sleeves, &c., &c. Smoothly finished inside and out. From 1/4 in. to 4/5 in. outside diameter, and Walls 1-16 to 11-16 in. thick. IMPORTED ONLY TO SPECIAL ORDER.

PHILIP S. JUSTICE & CO., 14 N. 5th St., Philadelphia.



Hoisting Engines & Elevators Safe, Durable and Reasonable in price. Friction Clutch Pulleys and Cut-off Couplings. We manufacture the "Giant Friction Ciutch Pulley, "known as the "Captain is the BEST IN THE WORLD for connecting the gearing of callender rol hoisting coal, logs of freight. Our Clutch can connect any amount of power, any speed, without slacking the motive power in the least, and gives no shot is easy to slilp and unship; in fact, this is the only Clutch that can do neavy wo

D. FRISBIE & CO., 123 N. Fourth St., Phila., Pa.

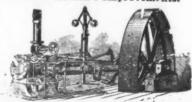


JOHN FELLOWS,

IRON, STEEL & BRASS · · · No. 70 Broadway, Brooklyn, E. D.

Marbinery, &c.

Corliss Engine Builders,



Pugineers, Machinists, Iron Founders and Boller Makers.

ROBT. WETHERILL & CO. Chester, Pa.

STOW FLEXIBIE SHAFT CO., Limited, 5th & Pennsylvania Ave., PHILADELPHIA, PA., Manufacturers of Portable Drilling, Tapping, Reaming and Boring Machines.

PHILA. SHAFTING WORKS. GEO. V. CRESSON, PHILADELPHIA.



18th & Hamilton Sts., SHAFTING SPECIALTY. Manufacturers of Shafting, Puleys,
Hangers, Couplings
and every appurte
nance used in the
TRANSMISSION OF
STEAM POWER.



Edwin Harrington & Son
MANUFACTURERS OF
PATENT EXTENSION AND

LATHES, Iron Planers, Radial, Upright, Suspension Multiple and Lever

DRILLS, and a variety of other MACHINISTS' TOOLS Patent Double Chain Serew

Pouble Chain Serew
Pulley Blocks,
unrivalled for Durability,
Safety and Pueer.
Patent Double Chain
Quick-Lift Holsts,
with Brake for quick and easy
low-ring.
Circulars furnished.
WORKS AND OFFICE.
Cor. S. 14th and Fenna. Ave
Philadeloris, Pa., U.S.A.
Represented by J. M. M. Represented by J. M. M.

NAKD, c7 Liberty Street, N. 7. C. E. KIMBALL, 138 Oliver St. Boston.



AIR COMPRESSORS. ALLEN'S HIGH-SPEED AIR COMPRESSORS

With Positive Moving Valves, Allen Engines, Stationary and Marine Boilers, Hoisting Machinery. Also, Patent Evaporators and Condensers for Animal Matters.

AIR COMPRESSORS A SPECIALTY. JOHN MCLAREN, River Street, - HOBOKEN, N. J.

CHARLES W. ERVIEN & CO., Engine Builders, Boiler Makers and GENERAL MACHINISTS,

SCREWS, NUTS & BOLTS,
Plano Hardware, Agraffes and Novelties in Metal.
Wholesale and Retail Dealer in
Wholesale and Retail Dealer in

IRELAND STREET, PHILADELPHIA.

CLORY. KELAEY & CO., Meriden, Ct.

TUBAL SMELTING WORKS, STANLEY G. FLAGG & CO.

PAUL S. REEVES,

ANTI-FRICTION METALS

CAR & MACHINERY BRASSES, INCOT BRASS AND SOLDER, WHITE BRASS.

Old Metals and Brass Turnings Wanted.

ESTABLISHED 1842.

WM. & HARVEY ROWLAND, Office: 307 Walnut St., Phila. PHILADELPHIA,

P. O. Address: MANUFACTURERS OF ALL RINDS OF

Elliptic, Platform & C Springs,

"Brewster Side Bar Combination Patented" Springs.

SWEDISH STOCK, OIL-TEMPERED and WARRANTED.

Swedish Tire, Toe, Blister and Spring Steel.

CAST SPRING AND PLOW STEEL. CAST SHOVEL, HOE AND MACHINERY STEEL

OXFORD TOE, SLEIGH, TIRE AND SPRING STEEL. BESSEMER SHOVEL AND PLOW STEEL.

BESSEMER MACHINERY AND CULTIVATOR STEEL.

RE-ROLLED NORWAY SHAPES. NOWWAY NAIL RODS ROLLED AND SLIT FROM SUPERIOR BRANDS.

FROM 1-4 TO 10,000 LBS. WEIGHT, True to pattern, sound and solid, superior in strength, toughness and durability to iron forgings in any position, or for any service what ever. Gearing of all kinds Shoes, Dies, Hammerheads, Crossbeads for Locomotives, etc. 1,000 Crank Shafts and 10,000 Gear wheels of this Steel now running prove its superiority over other Steel Castings. CRANK SHAFTS, CHOSSHRADS AND GEARING ARE SPECIALTIES. Circulars and Price Lists free.

CHESTER STEEL CASTINGS CO.,
Works, Ohester, Pa. 407 Library st., Philadelphia.

Under Hainsworth's Patents.

We make Castings practically free from blow-holes, of steel which is as soft and as easily Worked and Welded as Wrought Iron, yet is STIFF, STRONG and DURABLE, with a TENSILE STRENGTH of not less than 05,000 lbs. to the square inch. In short, our Cast-INGS UNITE THE QUALITIES OF STEEL AND WROUGHT IRON.

Wheels and Pinions, Dies and Hammer Heads, Engine and Machinery Castings of all descriptions, Railroad Frogs and Crossings, Plowshares, Moldboards and Landsides. WE USE NO CAST IRON.

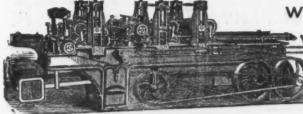
Send for circular. PITTSBURCH STEEL CASTING CO., PITTSBURGH, PA.



Punching Presses DIES AND OTHER TOOLS For the manufacture of all kinds of



Machinery Wood-Working



WAREROOMS

172 High Street, BOSTON.

61 S. Canal Street

FOR Railroad Shops, Planing Mills, Car Builders, Cabinet,

CHICAGO. Carriage, Sash, Door and Blind Makers.

We also deal in all kinds of

MACHINERY AND SUPPLIES.

91 Liberty Street,

INDIANA FOUNDRY COMPANY, Indianapolis, Indiana. MANUFACTURERS OF ALL KINDS OF CASTINGS.

CASTINGS BRONZED. COPPERED, ANNEALED.

Before ordering elsewhere, write | FINE 80 P us for prices and samples of our work.

IRON

Merrill Brothers, 26 First Street, BROOKLYN, N. Y.

CASTINGS. HAMMERS, FORGINGS and

POWER PRESSES. WOOD, JENNISON & CO.,

Manufacturers of SHAFTING, PULLEYS AND HANGERS-A Specialty. Also, Wood's Patent Bolt Threading Machine. Worcester. Mass.

PHILADELPHIA, PA.

Office and Works,

N. W. cor. 19th St. & Pennsylvania Ave. Manufacturers of

STEEL CASTINGS.

A Substitute for Steel & Wrought Forgings.

Circulars sent on application.

Steel Castings.

Light and heavy Steel Castings of superior setal, solid and homogeneous. All work guaran-sed. Send for circular.

EUREKA CAST STEEL CO.,

THE GENUINE No. 0 Tubular



With and without Guards, Is Manufactured by

R. E. DIETZ, 54 & 56 Fulton St., NEW YORK.

COLUMBIA BICYCLE



The Bicycle, as a permanent ractical road vehicle, is an eknowledged fact, and the housands in daily use are

THE POPE MFG. CO.,

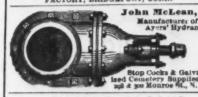
New Model, Top Snap, CHAMPION



It has a Patent Top Snap Action, by means of the the gra can be opened by pressing the lever either to make the grant of the property of the property of the state of the property of the property of ast the Rebound is not the other improvements are the other improvements are the platfol Crip Stock, and the Patent Fore-End



THE CRAIGHEAD & ELWELL MANUFACTURING CO., 33 Barclay Street and 38 Park Place FACTORY, BRIDJEPOKT, CONN.



TACKLE BLOCKS. Rope and Iron Strap of all kinds. Lig-

mvitæ Wood for Ten-Pin Balls.

Wm. H. McMillan & Bro., Office, 113 South Street, New York Factory, 32 to 40 Penn St., Brocklyn, H. D

AIR COMPRESSORS CLAYTON STEAM PUMP WORKS

Scranton Brass Works. J. M. EVERHART,

BRASS WORK, Carr & Wilcox's Patent Cut Files. Will cut faster, wear longer, and clog less than any File in the market.

CHE Street, SCHANTON, PA.

RUSSELL, BURDSALL & WARD.

PORTCHESTER, N. Y.,

MANUFACTURERS OF

CARRIAGE, TIRE, PLOW, STOVE & OTHER BOLTS.

Carriage Bolts made from Best Square Iron a Specialty.

Green River Works,

MANUFACTURERS OF

Table and Pocket Cutlery,

BUTCHERS', HUNTERS', PAINTERS', DRUGGISTS' & HOUSEHOLD KNIVES IN ALL STYLES AND VARIETIES.

OLDEST AND LARGEST AMERICAN MANUFACTURERS.

New York Office.

25 Chambers Street.



Factories, Turners Falls, Mass.

F. W. WURSTER, IRON FOUNDRY AND AXLE WORKS.

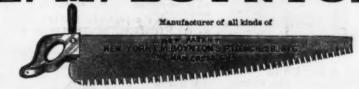
180 to 149 First St., Brooklyn, N. Y.

SUPERIOR WAGON, CART AND TRUCK AXLES.

J.M. CARPENTER PAWTUCKET.R.I.

MANUFACTURER OF TAPS AND DIES.

BOYNTON. E. MI.



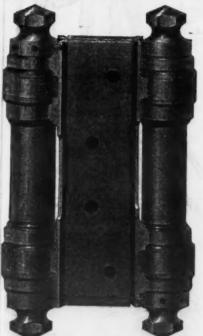
First-Class Saws, Frames, Cross-Cut Handles TOOLS, FILES, do.

CENUINE PATENT LICHTNING SAW 80 Beekman Street, NEW YORK.

I have during the year added to my extensive facilities the construction of a new Saw Manufactor 100 feet by 90 feet, comprising 36, 38, 40 and 42 Devoe street. I have purchased costly land and crect an additional four-story brick manufactory, in order to fill special orders for my paidly increasing but ness. The new addition comprises about 90,000 feet of floor space, filled with the latest improvemen in automatic machinery for saw manufacturing. For grinding circular saws I have a new machin admitted to be unsurpassed in accuracy and speed. I have also three horizontal machines for grinding cross-cuts, mill saws, hand saws, buck-saws, &c., with capacity for over 1000 saws per day.

I have added extensive File Works, but shall make only best hand-cut Files, as in filing saws I fit them the cheapest at the higher cost. I can fill special orders, and shall expect at all times to have a chand, at my store, 80 Heekman Street, New York, a few thousand dozen each Hand Saw Cross-cuts and Files, Saw Sets, Patent Handles, &c.

GEM SPIRAL SPRING



HINGES.

| | 10 1 111 | SINGLE
ACTING. | | ACTING. | |
|-------|---------------|-------------------|--------------|---------|--------------|
| Size. | For Doors. | No. | Per
Pair. | No. | Per
Pair. |
| 3 in. | 1 to 11/2 in. | 63 | \$0.80 | 83 | \$1.60 |
| 4 44 | 1 " 136 " | 64 | 1.00 | 84 | 2.00 |
| 5 44 | 1 "11%" | 65 | 1.25 | 85 | 2.50 |
| 6 " | 1 " 134 " | 66 | 1.75 | 86 | 3.50 |
| 7 41 | 134 " 134 " | 67 | 2.25 | 87 | 4.50 |
| 8 44 | 134 " 234 " | 68 | 3.25 | 88 | 6.50 |
| 10 " | 134 " 234 " | 69 | 4.50 | 89 | 9.00 |

Send for Catalogue to

WACONER & WILLIAMS, MANUPACTURERS OF

PRING HINGES for Screen and Panel Poors and Show Cases. And a full line of the best ROD and COIL DOOR SPRINGS. 82 BEEKMAN STREET,

BALTIMORE RIVET AND SPIKE WORKS.

Rivets, Spikes, Bolts, Nuts,



Bolt Ends, Wood Screws, Track Bolts.

WM. GILMOR of WM., cor. President & Fawn Sts.

not coing grant Any livaribustio the whof the fining as is d gas to lowere glazing lower to take of the the reg foot of the con

of the r

weel defe the pecis smal

absorby in can by yet k choice a higheat.

stoves

valve; main; gun hol valve; cleaning main; cope wi nace is d gen, abs ing a c hydroger could ger ence sho can be d the blast

absorb m This ext

heat that

lost by c poor coal short time heat resto the heart stock, wh the heat a 70 per ce the stock. then the st arrives at brick stov cient way reserve in safe, and Running in gave a rese and fast di a safe mini fire-brick added to t

carbon at 2
the cast-ire
of the fire
cwt. is atte
iron of 12 p
of labor. I
will pay for
leave a su
extra amou
The argun
forward in forward in iron pipe by been very e eral introd making cou sufficient su

shown to l servation, i

carbon at 2

favor for sa point raised will not dist

regenerator.
in error; b
of the gas t
of the stoves
evenly distri cend, but the of the regene opposite side